411-13

THE UNIVERSITY
OF ILLINOIS
LIBRARY
666.05
C
v.46
REMOTE STORAGE

North Manchester, Indiana HH

or V	JUST	FONT	SLOT	TITLE
H	CC	1	22	BRICK
			21	AND
			20	CLAY
			19	RECORD
H	CC	1	8	46
			7	MO.JAN.-JUNE
			6	1915
H	CC	1		Q.
				666.05
				C
				46
				<IMPRINT>
H	CC	7		U. of ILL.
				LIBRARY
				URBANA

PERIODICAL: ☐ CUSTOM ☐ STANDARD ☐ ECONOMY ☐ THESIS
BOOK: ☐ CUSTOM ☐ MUSIC ☐ ECONOMY AUTH. 1ST ☐
NO. VOLS. THIS TITLE
LEAF ATTACH.

ACCOUNT	LIBRARY	NEW	RUB OR SAMPLE	TITLE I.D.	COLOR FOIL	COLOR MATERIAL
66672	001			8417	WHI	~~615~~ 5

ACCOUNT NAME
UNIV OF ILLINOIS

ACCOUNT INTERNAL I.D.
B08450000

ISSN.
STX

I.D. #2	NOTES	BINDING FREQUENCY	WHEEL	SYS. I.D.
		0	1	3

COLLATING
TSA REBIND

ADDITIONAL INSTRUCTIONS
HNM=[V]
3 extra
Slip Card
8.00
3.00
$11.00

SEP. SHEETS	PTS. BD. PAPER	TAPE STUBS	CLOTH EXT.	FILLER GUM	FILLER STUB

POCKETS: PAPER | BUCK | CLOTH
SPECIAL PREP.
LEAF ATTACH.

INSERT MAT.	ACCOUNT LOT NO.	JOB NO.
	411	SP91

PRODUCT TYPE	ACCOUNT PIECE NO.	PIECE NO.
44 ~~21~~	13	7

HEIGHT	GROUP CARD	VOL. THIS TITLE
12.0	1	

COVER SIZE
X

Digitized by the Internet Archive
in 2019 with funding from
University of Illinois Urbana-Champaign

https://archive.org/details/brickclayrecord4619unse

BRICK and CLAY RECORD

RODGERS





OF THE
UNIVERSITY OF ILLINOIS
11 JAN 1915

The Man Behind the Lever

A brick maker's life
Was a life of strife
In the days of long ago,
When he dried his ware
In the open air
And prayed for the sun's bright glow.

But he dries today
A different way
And never minds the weather,
And the man whose clay
Dries the ideal way
Is the man behind the lever.

RODGERS "UNI-TROL" DRYER

L. E. Rodgers Engineering Co.
CHICAGO

RODGERS





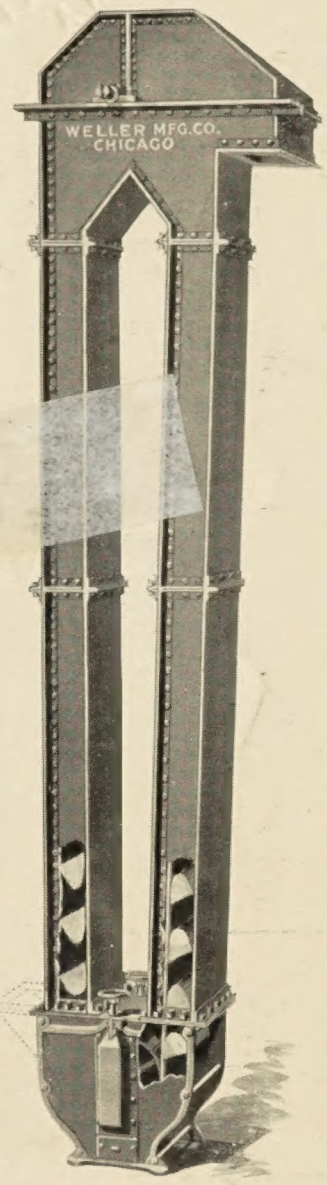
Vol. XLVI, No. 1 Chicago January 5, 1915

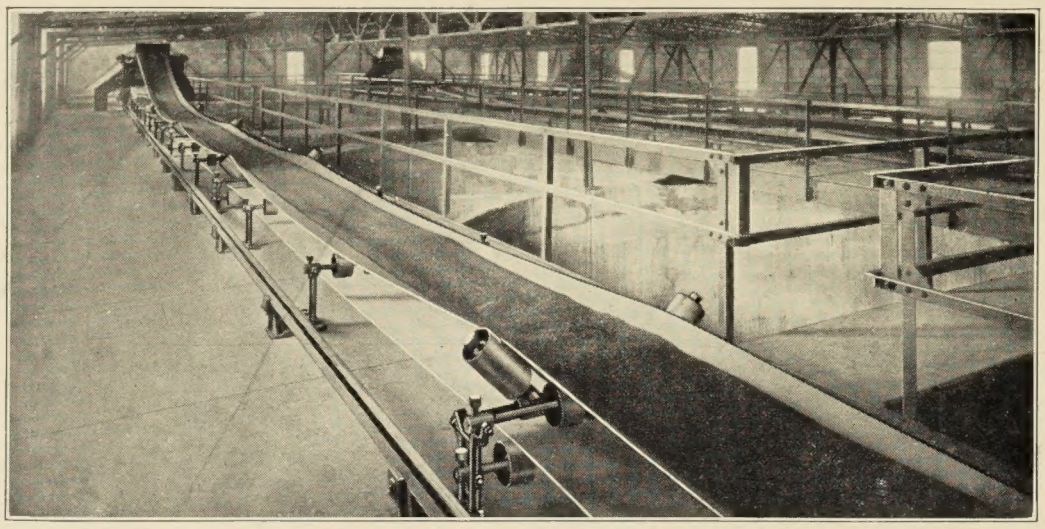
WELL ER-MADE

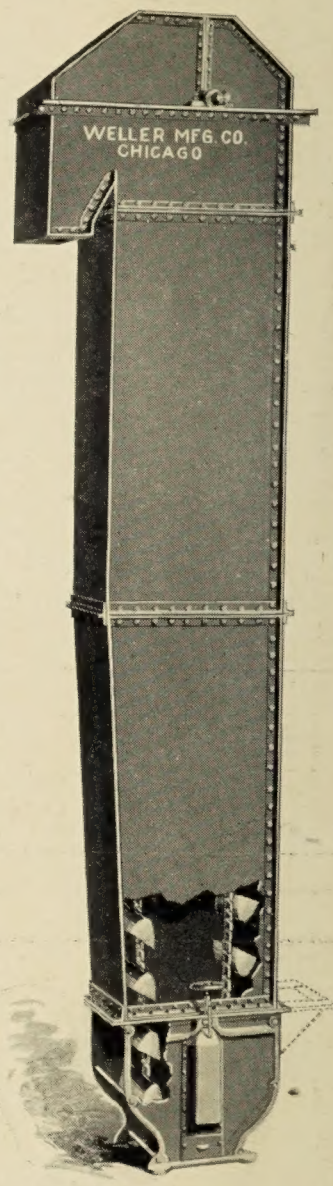
PRACTICE WHAT YOU PREACH

Quit Buying Food for Flames

Why not be consistent and use only fire-proof material in your own plant? Put in heavy, substantial, dust-tight, Steel Elevating and Conveying Machinery that will not burn or warp out of shape.







GOOD TIMES ARE COMING

Better be ready for them with equipment that you can depend upon for 24-hour service—equipment **that you know** is always good for a substantial overload—that will not reduce or curtail your capacity when you want to speed up or take advantage of good business conditions.

Now is the time to make your improvements. Get your machinery on the ground and installed before the busy season comes.

We design and furnish complete storage and handling systems for raw or ground clays, grog, shale, coal, etc.

Our General Catalogue J-20 describes our line of

Elevating, Conveying and Power Transmitting Machinery

WELLER MFG. CO., CHICAGO

NEW YORK	BALTIMORE	ST. LOUIS	DALLAS	SAN FRANCISCO
50 Church St.	Garrett Bldg.	710 Railway Ex.	711 Main St.	316 Rialto Bldg.

666.05
C
V.46

REMOTE STORAGE

LIBRARY OF THE UNIVERSITY OF ILLINOIS 11 JAN 1915

Trautwein DRYERS

Facts—

We sell the highest grade of drying equipment which brains, coupled with experience, can produce.

With that equipment goes the knowledge, acquired during a lifetime, of proper application to the maze of conditions as found on brick yards. This knowledge cannot be bought.

The confidence reposed in us by some of the oldest and largest brick manufacturing concerns is worthy of note.

Can you afford to experiment?

Trautwein Dryer & Engineering Co.

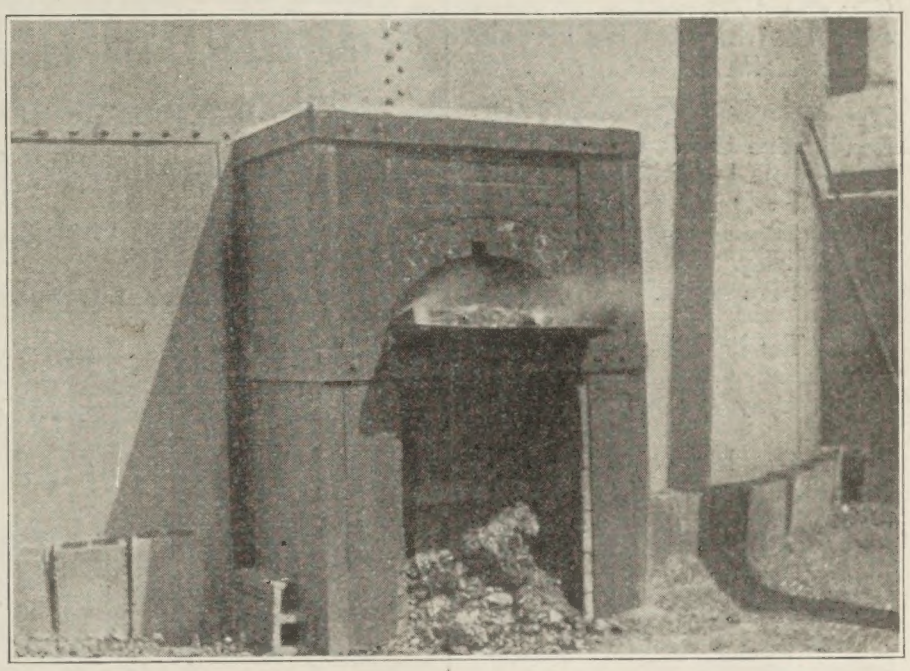
Manufacturers—Engineers

417 South Dearborn Street, CHICAGO

Fire Boxes

On Our Steel Shell Kilns We Have a Wide Range of Fireboxes Which Can be Used, the Box Being Practically Independent of the Kiln (as shown opposite)

Let Us Tell You More
Write Now



A Very Practical Type of Box

Claude Smith Company

Kiln Builders

Plymouth Building, Chicago, Ill.

348084

Service to Clayworkers

Alliance Brick Co.....116
Alliance Clay Pro. Co....108
Alsey Brick & Tile Co...103
Alton Brick Co.....110
Ambursen Co. 98
American Clay Machy. Co. 87
American Enameled Brick & Tile Co.....116
American Process Co.... 95
Arbuckle & Co.....133
Atlas Car & Mfg. Co.... 74

Baird Machine & Mfg... 8
Barr Clay Co.....108
Barrett Mfg. Co..... 91
Bartlett & Snow Co..... 94
Bessemer Limestone Co..108
Big Four Clay Co.....106
Bonner & Marshall.....115
Bonnot Co. 128
Bradford Pressed Bk. Co.116
Brewer & Co., H.....132
Broderick & Bascom.... 20
Brown Instrument Co....123
Buckeye Rolling Mill Co. 67

Caldwell Co., W. E..... 67
Carlyle Paving Bk. Co...107
Canton Grate Co..... 97
Ceramic Sup. & Cons... 11
Chambers Bros. Co.....7-71
Chicago Bk. Machy. Co.. 84
Chicago Retort & Fire Brick Co. 102
Classified Ads 134-135
Clearfield Machine Shops 66
Cleveland Alloys Co..... 72
Cleveland Bk. & Clay Co.106
Cling-Surface Co. 69

Danville Brick Co.....107
Davis Fire Brick Co.....102
Davenport Loco. Wks.... 69
Deckman-Duty Brick Co.106
Dewey Bros., Inc..... 70
Dodge Mfg. Co..... 66
Dover Fire Brick Co.....102

Eagle Tank Co..... 80
Engelhard, Chas. 16
Evans Clay Co.....102

Fairbanks, Morse & Co..126
Farr Bk. Co.....115
Fate Co., The J. D..136-139
Federal Clay Products Co.103
Freese & Co., E. M.....129
Frink Pyrometer 66

Gandy Belting Co..... 77
General Electric Co..... 19
General Traffic Assn..... 94
Gerlock, H. W..... 66
Goodrich, The B. F. Co... 98
Good Roads Machy. Co.. 71

Harris Brick Co.....108
Hamburg Vit. Bk. Co....107
Hendrick Mfg. Co..... 68
Hetherington & Berner.. 94
Hocking Valley Bk. Co...107
Hook Patent Kiln Co.... 89
Hydraulic-Press Brick Co.117
Hinde & Dauch Paper Co. 69

Jackson & Church Co... 82

Keim Brick & Tile Co....111
Keller Brick Co.....115

The Test of Excellence

One of the surest tests of excellence in any article, be it machine, process, appliance or accessory, is the maker's willingness and ability to advertise it.

The untried, or tried-and-found-wanting device is seldom backed up by advertising. The man who owns it is seldom so shortsighted as to invest money in securing a few dissatisfied users.

Here then lies the safety of the man who buys from advertisements. No persuasive salesman adds the rosy tint of eloquence to the calm, cold facts that are set forth in type. No representations of "buy now or be forever sorry" rush him into rash purchases.

In the calm privacy of his own thoughts he can weigh every statement and apply the acid test "Is this something I need?"

The advertisers in "Brick and Clay Record" state facts when they tell you what they have to sell.

They appeal to your power of reasoning, and seek your ultimate good fortune while they ask your patronage.

They know that what it costs them to get your first order will be poor profit if what they sell you does not live up to their promises.

Kimbell, S. S., Brick Co.115
Klose, K. W..... 74

Lakewood Engr. Co..... 73
Lehigh Car Wheel & Axle Works 67
Lehigh Port. Cement Co. 72
Louisville Machine Co.... 68

Main Belting Co..... 5
Manufacturers Equip Co. 83
Marinette Iron Works...124
Marion Machine, Fdy. & Supply Co. 12-13
Marion Steam Shovel Co. 15
Martin Bk. Machine Co.. 75
Martin Grate Co..... 93
Maurer & Son, Henry...102
Mayer Brick Co.....107
Metropolitan Pav. Bk. Co.107
Mexico Bk. & F. Clay Co.103
Murphysboro Pav. Bk. Co.108
Murray Iron Wks. Co... 67

National Dry Kiln Co.... 86
National Roofing Tile Co.111
Nelsonville Brick Co.....106
Nuttall Co., R. D..... 9

Ohio Galv. & Mfg. Co... 95
Ohio Kiln Co..... 75

Pettigrew Foundry Co.... 10
Phillips & McLaren..... 76
Pittsburgh Tile Mfg. Co..111
Purington Paving Bk. Co..107

Queens Run Fire Bk. Co.102
Quinn, John 103

Raritan Ridge Clay Co...110
Richardson-Lovejoy 66
Ricketson Mineral Paint.. 66
Rodgers Eng. Co., L. E... 1
Roessler & Hasslacher... 73

Sackett Screen & Chute Co. 79
S. A. F. E..... 14
Sawyer Belting Co..... 97
Schaffer Eng. & Eq. Co.. 81
Schofield-Burkett 127
Schultz & Son, A. L.....135
Schurs Oil Burner Co.... 95
Shawmut Paving Bk. Co.106
Smith Co., Claude..... 3
Smith, W. W..... 78
Snowden Co., Geo. E.... 68
Soisson Fire Brick Co....102
Standard Dry Kiln Co... 92
St. Louis Vit. Fire Bk. Co.103
Steele & Sons, J. C.....131
Sterling Brick Co.....108
Stupakoff Laboratories... 68
Sturtevant Co., B. F..... 85

Tecktonius Mfg. Co.....140
Terre Haute Vit. Bk. Co.110
Thew Auto Shovel Co...125
Thwing Instrument Co... 70
Trautwein Dryer & Engineering Co. 3

United Brick Co.....106

Wallace Mfg. Co.....130
Webb Wire Wks..... 94
Weller Mfg. Co..... 2
Williams & Co., C. K... 66

Leviathan Belting

Is 33 Years Old

LEVIATHAN AND ANACONDA
ELEVATING
TRANSMITTING
CONVEYING
BELTING

Anaconda Belting

Is 5 Years Old

A real reputation represents years of producing and selling goods of the highest quality.

The reputation of LEVIATHAN and ANACONDA belting, known by the user and conceded by competitors, is a live, positive thing founded entirely on the fact that

Each Belt is Made on Honor

and each year has witnessed quality invariably maintained and progress healthily made.

We come to you in 1915 with full acceptance of our responsibility and determination to save you money on each belt we ship you.

This is Our Obligation
Hold Us to It

Main Belting Company

Manufacturers and Engineers

Philadelphia **New York** **Chicago**
Pittsburgh **Seattle** **Birmingham**

Main Belting Co. of Canada, Ltd.
Montreal **Toronto**

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

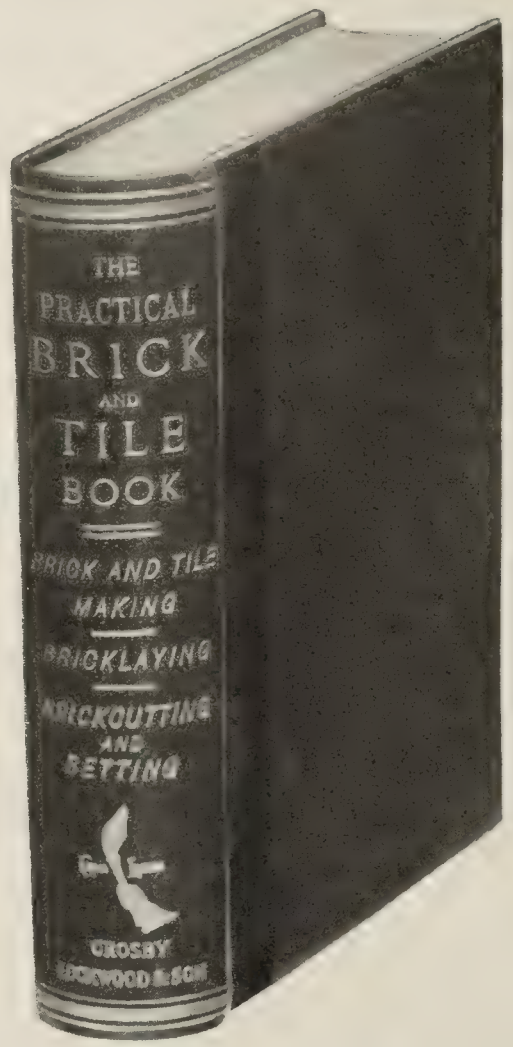
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



550 Pages, 4 1-2 x 7, 245 Illus. . . $2.40

CONTAINING a brief history of brickmaking, and much that will interest and instruct the maker of brick and tile. The processes described are largely English, and it is from England that we have received our best brickmaking knowledge. The text is by Edward Dobson and A. B. Searle.

In addition to this, a section is devoted to practical bricklaying, written by Adam Hammond, and illustrated with sixty-eight wood cuts. This, in turn, is accompanied with a chapter on brick cutting and brick setting, in which arch work is described in a simple and forceful manner.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy).....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller).....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

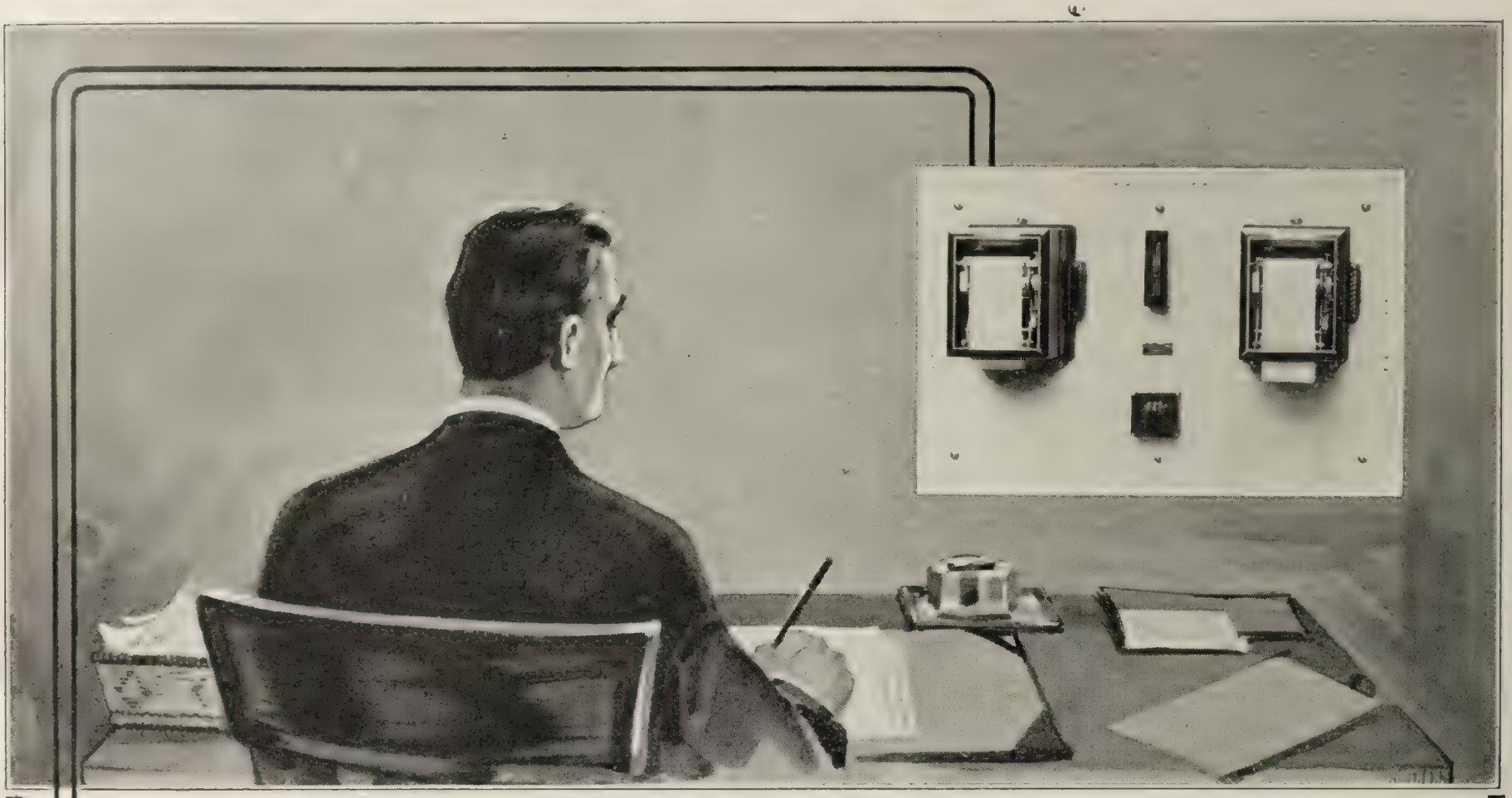
There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE



Let these Instruments Work Nights for You.
Put Them on Your Pay Roll.
They Will Be Your Best Assistant.

You can leave your office at night knowing that in the morning you will have before you a full report on the "Night's Firing. Neglect of duty on the part of careless firemen will no longer go undetected. The careful fireman will have a reliable guide for perfect burning.

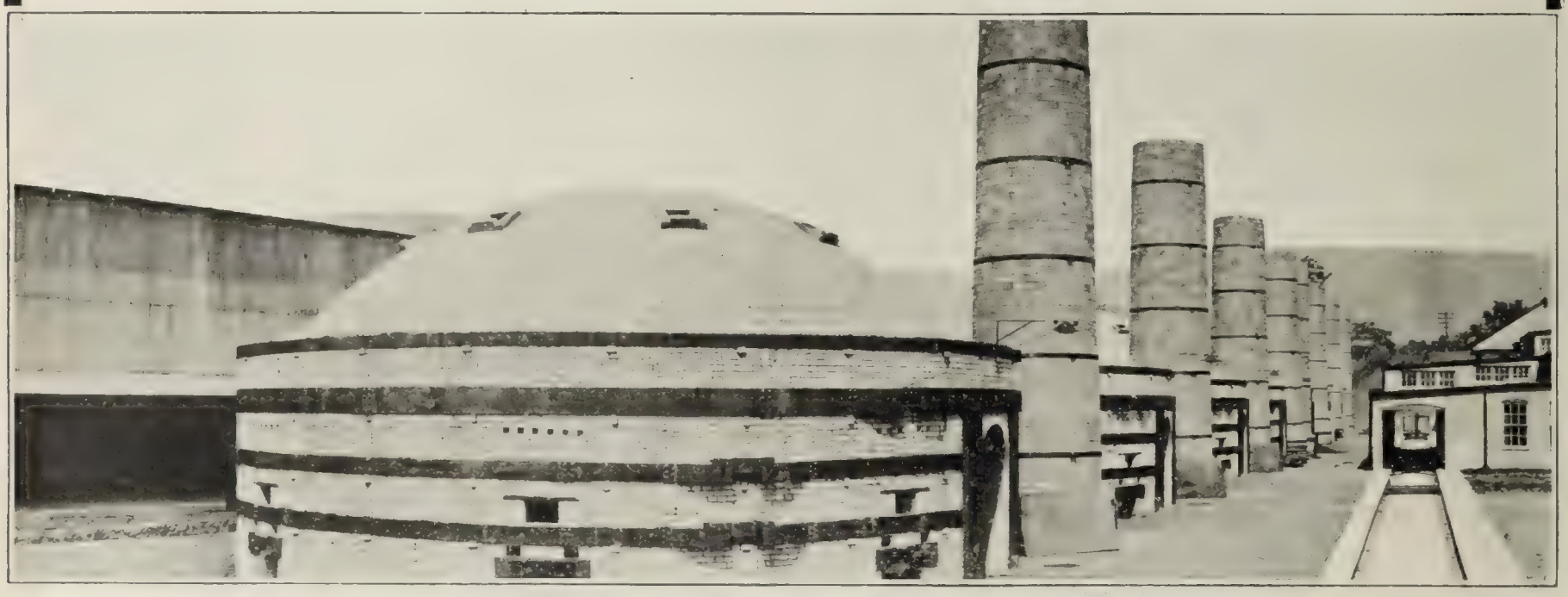
You will cut a corner off your fuel bill. You will reduce your waste.
You will increase your production.

HERAEUS Le Chatelier PYROMETERS

"The Ultimate Pyrometer"

have proven these facts wherever a complete equipment has been installed. They can do the same for you. **Why postpone an eventuality?**
Write today.

CHARLES ENGELHARD, 30 Church St., New York



Mention "BRICK AND CLAY RECORD" when writing to advertisers.



G-E Motor Driving 12 foot by 5 foot Induction Fan

Arial Tramway Driven by G-E Motor

G-E Motors Driving Clay Shed Elevators, Conveyor and 9 foot Freese Pug Mill

Boone Brick Tile and Paving Company, Boone, Iowa

15% Saved in Cost of Operation Plant Capacity Increased 25%

The Boone Brick, Tile and Paving Company, Boone, Iowa, equipped their 70,000 brick plant with motors manufactured by the General Electric Company.

Represses, brick machine, pulverizer, pug mill, elevator and conveyor, aerial tram, induction fan, exhaust fan, disc fan and pump are all driven by G-E motors.

Before this company installed G-E motors they paid $1.38 per ton for coal. They now purchase electric power for approximately two cents per kilowatt, realizing a saving in cost of operation of about 15% and increasing the capacity of their plant 25%.

Our motor drive experts will be pleased to study your local conditions.

General Electric Company

General Office: Schenectady, N. Y.

ADDRESS NEAREST OFFICE

Atlanta, Ga.	Columbus, Ohio	Kansas City, Mo.	Louisville, Ky.	Minneapolis, Tenn.	Rochester, N. Y.
Baltimore, Md.	Dayton, Ohio	Knoxville, Tenn.	Memphis, Tenn.	Nashville, Tenn.	Salt Lake City, Utah
Birmingham, Ala.	Denver, Colo.	Los Angeles, Cal.	Milwaukee, Wis.	New Haven, Conn.	San Francisco, Cal.
Boston, Mass.	Des Moines, Ia.			New Orleans, La.	St. Louis, Mo.
Buffalo, N. Y.	Detroit, Mich.			New York, N. Y.	Schenectady, N. Y.
Butte, Mont.	(Office of agent)			Niagara Falls, N. Y.	Seattle, Wash.
Charleston, W. Va.	Elmira, N. Y.			Omaha, Neb.	Spokane, Wash.
Charlotte, N. C.	Erie, Pa.			Philadelphia, Pa.	Springfield, Mass.
Chattanooga, Tenn.	Fort Wayne, Ind.			Pittsburgh, Pa.	Syracuse, N. Y.
Chicago, Ill.	Indianapolis, Ind.			Portland, Ore.	Toledo, Ohio
Cincinnati, Ohio	Jacksonville, Fla.			Providence, R. I.	Washington, D. C.
Cleveland, Ohio	Joplin, Mo.			Richmond, Va.	Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5244



Bridge the distance between the clay bed and machines by the B. & B. Aerial

Tramway System. Transport your clay quicker and cheaper than ever before—*haul it through the air!*

Hauling the material over the surface is expensive. If the surface is bad—if the roads are hilly, if you've got to bridge creeks or rivers—it's all the more expensive.

The answer is: *Haul it through the air!*

If you're employing an army of pick-and-shovel laborers, and maintaining a string of dump wagons and teams—

Or if you have spent a small fortune in building miles of steel trackage, and are maintaining high-salaried engineers to run expensive locomotives, your production costs are higher—and your profits lower—than they should be.

To eliminate all this hand labor—to make all power equipment unnecessary in the handling of clay—*haul it through the air!*

The B. & B. System (with Yellow Strand Wire Rope) is quick and continuous. Most of its operation is automatic and requires no power. Besides that, it costs so little to install. Write for catalog 16.

Broderick & Bascom Rope Co.

St. Louis Missouri

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, January 5, 1915

Vol. XLVI No. 1

Table of Contents

Arequipa Pottery 28
Better Brick Roads for Illinois 43
Boiler Room Economy 48
Brickmaker Accepts High Office . . . 36
Clay Storage 52
"Five Per Cent" Rate Increase 31
Model Dairy Barn 33
Nineteen-Fifteen, The Year of Promise 24
Reaching the Farmer 49
Science of Cost Finding 46
The Fire Insurance Contract 41
Using Brick for Terraced Approaches 37

The Editor's Corner 22

Freight Tariffs and Troubles 61
Letter Box 59
Machinery and Equipment 62
Pottery Notes 84
Questions and Answers 54
Semi-Monthly Trade Review 75
The Superintendent 57
Wake of the News 76

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

The Editor's Corner

GOOD RESOLUTIONS are a part of the New Year program. The average man, as he takes inventory of his stock on hand, bills payable and receivable, personal worth and physical assets and liabilities, has a way of applying the same lines to his personal life. As a rule, he finds ample room for improvement.

The pile of brick bats which encroaches on the wagon road near the office door grows familiar and becomes a part of the landscape.

The dust covered books, the nineteen-fourteen calendar, the steam-stained glass on the picture over the manager's desk all indicate what a former president of these United States once called "innocuous desuetude" which being translated, means harmless disuse.

In our own physical and mental makeup, strenuous endeavor leaves a bi-product of rubbish. This, being neglected, becomes familiar, just as the pile of brick bats that encroaches on the road near the office door, and after a few well meant thoughts relative to its removal, stays, a seeming necessity.

The fact that it crowds our mental team out of the road and adds to the wear and tear upon the wheels of our personal well being, seems lost as days pass.

Instead of our brain absorbing the wisdom of the times, as it comes from the pens of those who write and whom we pay to write, our eye finds the uninviting dust and our fingers stop at the initial cleaning-up task that must be done before we can, with comfort, gain the knowledge which our money has bought.

Last year's calendar, still awaiting its casting into outer darkness, tells us, today, that there is something wrong with ourselves.

After our stock has been inventoried and the balance sheets footed, it is well, as has been said, to take inventory of our own mentality, our own power, our own way of doing things, our own habits.

Once a week is none too often to take the inventory. Once a month, if no better, is infinitely more valuable than once a year.

Yet since human frailty is so marked, once a year is far and away better than never, and no time in the year lends itself to this "looking inside" so well as the present.

What has the last year taught you? Your balance sheet may show you that you have added a few dollars to your bank account or, in some instances, that the balance is not quite as large as it was at the beginning of 1914.

Neither of these points is worth much to you if your mental inventory shows on the wrong side of the ledger. Are you as capable as you were a year ago today? The signs of that capability are, to a great extent, a clean desk. Is your "house in order" so far as your own office is concerned? Are you as capable of directing men as you were a year ago or have you given more and more authority to those beneath you—not that they have grown wiser but that you have "eased up"?

Have you as firm a grip on your business as you had or are the heaps of brick bats, the dusty books, the last year's calendar and the steam-stained glass a part of your physical and mental being?

The year that has just passed brought many problems to you, many worries, many doubts. Did these make you stronger or weaker?

Do not let the black figures and red lines of the Annual Statement mislead you into thinking that you are nearer success or failure than you were twelve months since.

In the final accounting more emphasis will be placed upon what you have gained in manhood, in honesty, in strength of purpose, and power of direction than upon any bookkeeper's showing of assets and liabilities.

LOOKING back over the old year—a year filled with soul-stirring incident—one bright spot appears which marks a distinct gain to the human race. It is the fast growing and inevitable stamping out of the liquor traffic.

In Russia, where the government never has departed from the nursery theory, it required an edict to make a drunken nation live in a land of air-tight prohibition.

Where the liquor traffic was intrenched, seemingly, behind the impregnable defense of

government ownership, it was wiped away by a pen stroke when the government found itself in direst jeopardy.

Here in America, which we like to consider the uttermost opposite of Russian despotism, one of the houses of Congress has voted for a constitutional amendment which would give nation-wide prohibition.

Granting that a two-thirds vote is necessary to make this effective and that a bare majority, only, voted for the amendment, it still marks an epoch.

Perhaps the greatest lesson of all comes, however, in the statement made by Secretary of State Bryan in a letter which he wrote to the national secretary of the Intercollegiate Prohibition Association, in which he stated that total abstinence was the surest attack on the liquor business. When liquor lacks consumers there will be no liquor.

To quote from an editorial in the Chicago "Tribune" of Jan. 4:

"This method fits in precisely with the democratic scheme of society which is based upon the theory that the individual human can be made a self-respecting, thinking unit in the mass, and that the mass, consequently, will be self-ordered and self-governed.

"We do not disparage prohibitory statutes in restriction of the liquor business. To the extent that they are effective they are beneficial but they are not perfect substitutes for the better thing of self-government of habit without law. Intelligence aroused by education is a surer preventive, in the case of liquor as in other things, than prohibitory law.

"Liquor can be attacked by intelligence. One difficulty in the way of abstinence for many years was the determination of advocates of prohibition to make it a moral issue. The man who pushed his way into a saloon once a day or twice a day was not conscious of a moral dereliction. When he was told that he offended good morals by taking a drink he resented the charge and was more than impervious to it. He was hostile.

"When he is told that his habit of drinking has inevitable consequences in the shape of disease, decreased efficiency, a shortened life, with the possibility of total incapacity and destitution, he is being reached in a manner which permits no resentment. It is true that in many cases there is a deterioration of morals as the result of drinking, but too many men know from experience that morally they are as good as teetotalers. What they cannot maintain in honesty is that they are physically and economically as good, or, if they happen to be, that they will remain as good.

"The movement which teaches that is the hard knock against the making and drinking of liquor, and we think it would be found to be the basis of the success of the anti-saloon propaganda in so many states."

The large employers of labor are meeting the "liquor problem" at every turn and with few exceptions are placing the strictest of prohibitory bans against even the "occasional drinker."

Corporations instituting "safety first" departments are learning that industrial safety lies in individual abstinence and they are weeding the ranks of unskilled labor, and up through the army of skilled mechanics to the sales offices and directors' rooms.

The rule is "Thou Shalt Not Drink" and obedience to this rule is the price of promotion and, in many cases, retention.

During the recent business stagnation when, in order to survive, it became necessary to economize, a host of men lost employment. It needs no written record to impress the fact that the men who went first were those who "Could take a drink or leave it alone, just as I feel."

In the clubs where leaders of industry meet, the "usual" libation has passed the "occasional" stage and is fast becoming conspicuous by its absence.

Men are learning that they have no right to assume lack of control in others, until they are sure of their own power to control a similar situation. And the assurance of this, in turn, is fast passing.

The world has grown better, in the light of this newer knowledge..

In the January 19 Issue—

The Continuation of "The Fire Insurance Contract," "Reaching the Farmer" and the "Science of Cost Finding," together with a host of new and valuable feature articles that will be of intense interest.

Nineteen Fifteen—

After the Darker Hours of a Year Marked by Domestic Disturbances and a World War, the New Year Gives Assurance of a Steady Improvement in Manufacturing and Constructional Lines

NINETEEN-FIFITEEN opens as a year of immense possibilities. The closing months of 1914 were marked by a financial reconstruction that made easier breathing for those who had waited and watched for a firm basis upon which to predicate some thought of what the future had in store for America. Today a new promise sheds its beneficent light over this, the land of our birth or adoption.

The United States of America has weathered a great storm. No "panic" or "period of depression" (with the exception of the Civil War) that is in the memory of the oldest living inhabitant, held such potent chances for an utter stagnation of business. The closing of the Stock Exchanges guarded us against the ruin that would surely have followed the "dumping" of American securities held by foreign investors. The immense crops heaped grain that was more precious than gold in stores that were all too small to receive the millions upon millions of dollars' worth of foodstuffs.

After the first paroxysm, trade began to adjust itself to new conditions. The workers of the old world were lifted bodily from their natural pursuits and fed to the guns. Those that remained, as well as those that fought, needed food and clothing. The armies needed ammunition, motor-cars, boots and a host of manufactured articles that we, alone of all the world, could supply.

So, arising from a paralyzing condition came one of unwonted activity. To it was added the altogether sensible decision of the Interstate Commerce Commission, granting the freight increase that it had denied but a few months before.

The Steel Corporation, always a barometer of industrial conditions, has reopened its closed shops. The fire of its furnaces again colors the gray wintry sky. The hum of a million spindles and the lights in as many factory windows tell of all day and all night work. The worker is at work—all's well with the world—or at least with that part of it where Peace reigns.

So long as the warring nations of Europe continue at each other's throats, this condition will continue in America. So long as Europe has a penny or a sou or a mark to spend, it will flow westward, to pay for the things that are necessary to keep her armies alive.

And with this golden flood comes the promise of "easier money" for the American investor, the American manufacturer, the American builder. Later, when the remnants of Europe's armies shall have been "laid off," like crippled workmen, steerage room will be at a premium, for sorrow stricken Europe will suffer a new exodus as her people shake the blood-mud from their sabots and turn their faces toward the welcoming shores of this thrice blessed land.

Already foreign capital has begun to find its place in American industry. The broken tariff walls are as nothing when compared to the awful nightmare of war. No "protection" is necessary to insure our manufacturers against the "pauper labor" of Europe. It has gone into the trenches along the Marne, and to the bottom of the North Sea.

We have come to know what sort of a country we really are. Straining at the gnat of a changed administration and a lowered tariff, we have swallowed the camel of the greatest war the world has ever known. And, seemingly, it was not such a big swallow, after all.

The clay products industry, divided into two classes —those products that are known as the "rougher" materials—brick, tile, hollow block and the like, and the finer products—pottery, china, electrical porcelain and similar materials, are facing peculiar conditions. Of these the makers of products that enter into building construction have every reason to believe that the trade losses of the past six months will be recouped in the first half of 1915. A fair promise of this is given in the letters that are produced in facsimile on succeeding pages of this magazine, and the interviews that follow.

The Metropolitan Life Insurance Company—the most important financial power in the building loan world, so far as the East is concerned, speaking through its comptroller, Walter Stabler, says:

"We are curtailing loans. How long this policy will be followed I cannot say, for a great deal depends upon the war, and its effect upon this country's money markets. But of this, I am certain—that the outlook is much brighter than it was a half year ago. I believe we have passed the crisis and are on the return road to prosperity. The country has, in the interim, been accumulating a demand for new buildings, which demand must be met some time. Just how soon this construction will go ahead depends entirely upon the availability of money. Here in New York the main idea seems to be to wait until demand decisively asserts itself."

Walter Lindner, of the New York Title Guarantee and Trust Company, speaking of the outlook for 1915, says:

"I am an optimist. I am a firm believer in the stability of our country, even in such a crisis as that from which we are just emerging. In the matter of encouraging building construction, however, I would urge upon the country a certain conservatism—not that sort of conservatism that originates in fear—but which guards against anticipating a quick return to prosperity. There will be many spurts, and almost as many reactions, but in the end each spurt will place the building situation one notch nearer that state of general satisfaction toward which we are all yearning. The attitude of this company is to discourage indiscriminate construction, so far as New York it concerned, but meritorious projects will receive attention and, all things being equal, support. Industrial and commercial operations have the right of way.

"The mortgage market in New York is showing signs of improvement, although there are some who can see no signs for the better. Personally, I think that the new year will bring a great deal of investment money out from the places where it has been hoarded."

Frank Vanderlip, president of the First National Bank, New York, cautions the country against too great anticipations regarding the financial recovery.

"If I could speak face to face with the leaders of the various industries of this country, I would say—'Be

the Year of Promise

A Certain Caution, Tinged With an Optimism That Finds Its Reasonableness in the Splendid Way America Has Survived a Financial Storm Which Threatened Its Solidity, Marks the Utterances of Prominent Financiers

calm.' We have left behind a very trying time. The year 1914 will go down in financial history with those of 1907 and 1893, but it will have an attribute that the others did not have. It demonstrated American resourcefulness in a convincing way and it showed how providential it was that we had the federal reserve bank law in such shape as to become operative at the country's most crucial moment. Banks everywhere will continue to use caution in making loans, but there seems to be reason to believe that conditions will continue to improve gradually."

These interviews are printed because, in the minds of some men, they represent the trend of thought as it exists among the most conservative men in the financial world. They may be taken as the "rock bottom" and upon them may be built the optimistic thought that flows out across the country—the optimism that is bred of the whirring of machinery, rather than the clink of the dollars. A brighter tone pervades the autograph letters from Chicago's greatest bankers, one the president of the second largest bank in the world.

Every one who has to do with the supplying of material to building enterprises understands that somewhere, along the line, some one has to approach the financier and secure, from him, the golden lubricant that will make the wheels of the construction work run smoothly. Somewhere the crisp rattle of dollars must mingle with the clink of the trowel and the shriek of the hoisting engine's whistle. So the financier becomes a guide, mentor and friend when construction is under way.

He is, however, a poor "prognosticator." The one thing that the average financier fears is over-optimism—the one thing he abhors is a "boom," or, as one of them has mentioned, a "spurt." Yet, we who make and deal and use clay products know that, in "boom" times we make and sell more goods and get better prices; somehow or other, we cannot look with the same placid contentment upon a situation which, as has been said, is emerging "from the danger of a disastrous panic" into a cold twilight sort of "safety first" atmosphere, in which we must all have caution.

We have but a short time to live. We have a still shorter time in which to make our fortunes. Every month or every period that is, as it were, burglarized from this time, as the past six months have been feloniously abstracted from the life of practically every American manufacturer, gives rise to a feeling that makes us want to work over time during the six months or year to come.

It will take more than the guarded utterances of financial magnates, to keep the American manufacturer from expanding and running his plant to capacity during the few earlier months of this year. He will believe, as we believe, that the demand will be steady, insistent, willing to pay. As one of our New York friends remarked, the cessation of building throughout the past four or five months has caused a shortage of housing facilities, not only in residential but in factory and other industrial lines. This demand will grow stronger and stronger as business conditions improve, and there is no doubt but that in April or May, will be seen the beginning of the most wonderful building boom this country has ever known.

So much for the so-called "rougher" clay products. In the pottery, china, and electrical porcelain lines, a lowered tariff has been absorbed, and the industry is on as firm a base to-day as it was when the protective wall rose many cubits higher than it now measures.

Of course, much of this is due to the fact that the potteries of Austria, Germany, France, and, to some extent, England, are practically closed. There is an indication that American potteries will be called upon to ship their finished product to Europe, instead of having to compete with the European product, as shipped here. This makes a condition which must be eminently satisfactory to the American clayworker, whose lines are cast not upon tonnage, but rather along the idea of the artistic unit.

Nineteen-fifteen opens, as it were, with an interrogation point. Behind that mark, however, glows a promise that seems a surety. It is built on a firm foundation—"the strength of a nation that has been tried and not found wanting."

We have survived the shock. We have calmly gone about our business, curtailing here, economizing there, and, in some cases—nay, in many cases—refusing to buy new equipment, or to make extensions to old, until we knew.

But, gradually, as the new year opens, we are seeing our way clear to buy this, and that, or something else, or to do some things which we ought to have done months ago.

Each of us has his share in the making of the new prosperity. Not through extravagantly talking "good business," nor, perhaps, in ceasing, altogether, to mention the European war. We can all do our part, and we are all doing our part in not allowing ourselves to be frightened. While immense millions were hoarded in safety deposit vaults to an extent that made a readjustment of finances extremely difficult, this was the timidity of wealth, the clutch of the miser.

The American business man has acted sanely. He can be trusted to continue that sanity for some time to come. And, it will be his sane action that will bring about the prosperity about which so much has been said, and toward which we look with pleading eyes.

A glance at the stock market reports will show that the ruling prices on American industrials are, in the main, good. Traveling salesmen report a stronger demand for raw material than marked the closing of 1913 and the beginning of last year. Plants that ran on half time and some on no time at all are taking back their employes, building their fires and starting their wheels.

The American banker urges conservatism, but with it he promises support for all legitimate enterprises. It looks as though the builder of flimsy frame structures—the type of house that is built to sell and not to last—will have hard work in securing his mortgage loans. But where there is a rental demand, financial support will follow and, it is fair to assume that banks will be much more apt to loan funds upon permanent improvements than upon those which must be, for the main part, temporary.

Altogether, the situation is a bright one for the man who owns a clay bank, a pug-mill, a brick machine and a kiln.

CAPITAL, SURPLUS AND UNDIVIDED PROFITS $ 30,000,000

Continental and Commercial National Bank
of Chicago

GEORGE M. REYNOLDS, PRESIDENT

RALPH VAN VECHTEN, VICE PRESIDENT
ALEX ROBERTSON, VICE PRESIDENT
HERMAN WALDECK, VICE PRESIDENT
JOHN C. CRAFT, VICE PRESIDENT
JAMES R. CHAPMAN, VICE PRESIDENT
WILLIAM T. BRUCKNER, VICE PRESIDENT

NATHANIEL R. LOSCH, CASHIER
JOHN R. WASHBURN, ASST. CASHIER
HARVEY C. VERNON, ASST. CASHIER

GEORGE B. SMITH, ASST. CASHIER
WILBER HATTERY, ASST. CASHIER
H. ERSKINE SMITH, ASST. CASHIER
WILSON W. LAMPERT, ASST. CASHIER
DAN NORMAN, ASST. CASHIER
GEORGE A. JACKSON, ASST. CASHIER

Chicago, January 5th, 1915.

Brick and Clay Record,

Chicago, Illinois.

Dear Sirs:

While it is impractical to give any very lucid prediction as to what 1915 has in store for us, in a business way, we can, if the last two months be indicative of those that are to come, figure confidently upon a gradual return of better times. The first crash of the European war, so far as it affected this country, has been met and weathered. Financial conditions, it may be said, are practically normal and sound.

The increase in rates that has been granted to the Eastern railways insures a better tone to general business and this applies in great measure to the building trades.

Construction work is so largely based on mortgage loans that even the slightest ripple on the surface of finance has the effect of a devastating storm, so far as new work is concerned. A conflict that may almost be called a world war has caused more than a ripple, and it will be some time before building construction recovers to the point where it can be described as normal—that is, a regular volume of building construction with the normal increase which comes in times of business activity.

The immense crops and the insistent market for farm products is fast turning the balance of trade in our favor, and so brightening the general financial aspect.

I am confident that there will be sufficient funds to finance legitimate building enterprises and at a rate of interest that will not be so high as to militate against the success of those interested in the manufacture of materials which enter into building construction.

Yours very truly,

G. M. Reynolds

JAMES B. FORGAN.
PRESIDENT.

THE
FIRST NATIONAL BANK.
CHICAGO.

January 2, 1915

Editor of the ''Brick and Clay Record''

Chicago, Illinois.

Sir:

I am in receipt of your request for my opinion concerning the business outlook for the year 1915.

During the last two months of the year financial conditions have cleared up rapidly until they are now practically normal. Since the increase in rates has been granted to Eastern Railways, a better tone prevails in general business and the feeling for the future is optimistic; business is fundamentally sound and the outlook is good for an increased volume.

The indications are that this is particularly true as regards the building trades. For some weeks after the commencement of the European war, building operations in Chicago were to a considerable extent suspended, largely owing to the fact that there was no sale for mortgages. This condition, however, was only temporary and it appears, now that real estate loans are again moving freely, as if, in addition to the building operations that were temporarily suspended, there would be a very considerable amount of building of flats and residences. The New Union Depot and the contemplated widening of Twelfth Street and of Michigan Avenue north of Randolph Street, should also help the volume of building.

However, although domestic conditions are sound and the general outlook is favorable, it seems to me that we cannot entirely escape the widespread effect of such terrific destruction of property and interference with international business relations as are caused by the European war, the financing of which will result in higher rates for money, both for investment and commercial purposes. It would, therefore, be unsound to attempt to boom domestic business by undue expansions of credit until we find out what will be required of us in caring for our foreign indebtedness and for securities which may be thrown upon the home market.

Very truly yours,

Jas B Forgan

President.



The Arequipa Pottery—A Unique and Successful Philanthrophy.

The Arequipa Pottery

There Inexperienced Girls, Who Come With- in the Shadow of a Great Scourge, Make Some of the Finest Pottery in America



Mixing and Screening the Clay.

IN Marin County, California, not many miles from San Francisco, is located a pottery which is entirely unique, not only in the character of its output and in its method of making and burning, but in the very thought that gave it birth.

In a way, it may be said to have merely started, yet its wares are sold in the largest cities of the country, being handled by world noted retailers and commanding prices that rank with those demanded for the output of America's best potteries and those of Europe.

The Arequipa pottery was founded about three years ago by Dr. Philip King Brown, of San Francisco. The buildings are situated about twenty miles north of the Golden Gate amid scenery scarcely rivaled in any other part of California, the location having been selected for what was known as the Arequipa Sanatorium. The object of this sanatorium was to give care and treatment to working women, who were suffering from tuberculosis in the incipient form, and to have this care and treatment given at the lowest possible cost. Since a great part of the treatment was to be the breathing of health-giving fresh air, the site chosen was, as has been said, especially selected from a standpoint of health and scenic beauty.

Some idea of the extent of this philanthropy can be gained when it is understood that the maximum charge is $1.00 per day, which includes an abundance of nourishing food, careful medical attention and nursing, as well as laundry, and all other living expenses.

After successfully working out the problem of making an institution of this kind self-supporting, Dr. Brown conceived the idea of finding a form of employment whereby the patients could earn the $1.00 a day that was necessary for their maintenance. Most of the occupations followed by women were open to the objection that they either hindered the progress of the cure, or else the products of their labors might carry contagion. The thought came that the making of pottery was not particularly arduous nor at all likely to be detrimental to the health of the worker, while the burning of the ware at a high temperature effectively insured against the objection that came through the idea of the finished



Apprentice Boys Harvesting the Clay.

product's carrying and spreading the tuberculosis germ.

At first, some doubt was felt as to the salability of ware made by inexperienced workwomen, but soon, under the supervision of a trained ceramist, the product reached a point where its merit attracted the attention of local dealers.

After a few months Arequipa pottery was on sale at nearly all of the large art stores in San Francisco, and orders grew larger and larger until it became imperative to build more kilns and to add the necessary facilities for doubling the output.

During the early months of the experiment, the workers were kept under the strictest observation, in order to ascertain what effect the work had upon their health. As a result of these observations, it was decided by the physician in charge, that the work was not only non-injurious but that it was actually beneficial. It was noted that the girls working in the pottery made steadier gains than those who were not given this employment.

As a rule, for the first month or six weeks after the patient has arrived at Arequipa, she does not do anything but rest and recuperate, and then, if the physician in charge decides that she is strong enough to go to the pottery, she is allowed to work but one hour a ... ... after a period of observation, she shows no ill effects, the working period is gradually increased until the maximum of five hours a day is reached.

One of the greatest problems encountered is that of teaching the new workers and, from the very nature of the enterprise, this process goes on unremittingly. The average length of time that a patient stays is about six months, out of which must be taken the original entrance time of a month or six weeks. This would leave about 4½ to 5 months in the pottery. It must be remembered, too, that only incipient cases are taken, and, as a rule, the patient is strong enough to go home after a few months in the pottery. Here, her place is taken by another, who has to be trained to the work, and thus it happens that the best workers are constantly leaving, and the new untrained hands constantly being taken on.

Nearly all of the work is done by hand, there being no machinery outside of a small compressor which furnishes air to the glaze atomizers. The body of the ware is composed of California clays for the most part, a certain percentage of foreign material being used in some of the mixtures where special glaze surfaces are desired.

The California clays, however, are found very suitable for the kind of ware which is manufactured, as they are very plastic, safe to dry, and easy to burn. The color ranges from light cream to dark red. A red body containing about sixty per cent of local clay is the one most generally used, this being found about 200 ft. away from the pottery.

Boys are employed to do the heavier work, such as digging the clay and screening it. This screening is done through a coarse screen at the pit, and the clay it then put in the sacks and hauled to the pottery. The body is weighed out and mixed by hand in cement tanks, water added, and the mixture allowed to soak, for about forty-eight hours.

It is then blunged with a hand pedal and screened through a 120-mesh sieve. After settling, the supernatent water is drained off and the thick slip is stored in large crocks until it is wanted.

The throwing and press clay is prepared by drying out the slip in plaster boxes until it is of a proper consistency for working. A great deal of the ware is thrown,



An Open Air "Workroom" at the Arequipa Pottery.



Setting the Kilns.

the wheel being the old-fashioned foot-power affair, seen in all small potteries. The large pieces, such as garden urns, are pressed, while other shapes, irregular in form, are cast. The casting shop is over the kiln room, the waste heat from the kilns being sufficient to keep the molds dry. Three kilns are in use, all of the up-draft muffle type, and burning fuel oil. The temperature necessary to mature the glazes varies between 1150° C., and 1190° C. The average time taken to burn off a glaze kiln is about 24 hours.

The finishing and decorating of the ware is done entirely by the women patients. The designs are sketched or traced on the damp clay and then carved or painted, according to the manner in which the design is to be carried out. These designs are supplied by well-known artists who have become interested in the work, and a number of wealthy philanthropists have loaned priceless examples of old world porcelains, that they might be copied at Arequipa.

The decorating is all done out of doors, the climate allowing the workers to remain out in the open air for the greater part of the year.

They take the pieces upon which the designs have been sketched out to one of the trails near by, where they sit and work until the design is finished. When this is accomplished, it is submitted to the director, who passes upon the workmanship, and if, in his opinion, the design has been well carried out, the worker signs her initials upon the bottom of the piece, and it is then laid aside to dry.

The boys who harvest the clay, and who do the other heavy work about the pottery, are secured from the same source as are those who set and draw the kilns, and who also attend to the spraying and dipping of the pieces. These boys come from a San Francisco orphanage, and are taught the potter's trade in the same manner as an apprentice would be taught in a larger pottery, with one exception—they are paid much better wages.

Considering the inexperience of the workers, it is surprising that the product of their hands should be of such merit as to find a ready sale, when offered in competition with the ware produced by the largest concerns in this country. At the present time, Marshall Field & Company, of Chicago, John Wannamaker, of New York, and the Dohrmann Commercial Company, of San Francisco, find it to their advantage to handle Arequipa ,and it is confidently expected that before long, every one who is interested in this wonderful work will be able to obtain examples of it in any of the large cities on this continent.



Arequipa Pottery Rivals in Artistic Merit the Products of World Famed Factories of This and Other Nations. Photograph Reproduced Through Courtesy of Marshall Field and Company, Chicago.

The "Five Per Cent" Rate Increase

A Few Surmises and a Warning That Will Interest Manufacturers of Burned Clay Products

By Irwin W. Preetorius
Freight Traffic Counsellor

NO one—not even the members of the Interstate Commerce Commission itself—knows the result of the recent decision anent the now famous "five per cent rate increase." Some time since, "Brick and Clay Record" published an article in connection with the petition which was, at that time, pending before the commission. In this article, attention was called to the fact that "five per cent rate increase" was a misnomer, in that the rates would be increased, in some cases, up to nearly eighteen per cent, if the petition, as filed by the railroad companies, was granted.

Nothing seems to have transpired since that time to change this position, but it looks as though the railroad companies were facing a peculiar situation. The popular feeling regarding freight rates is, and has been for many years, that the companies are charging their shippers "all that the traffic will bear." A rate of, say, $3.00 per net ton on face brick, from Canton, Ohio, to New York City, means $9.00 per M., and considering that these brick are sold in New York for $22.00 to $23.00 per M., f. o. b. cars, any severe increase is apt to either shut Ohio brick out of the New York market, or compel Ohio brick manufacturers to take a still lower yard price than that which they have been receiving.

Five per cent increase, in this case, would be 45 cents per M. brick, and there is some chance that this could be taken care of by better salesmanship, which means a higher retail price, or by the splitting of the raise in rate—practically an absorption of the increase—by the manufacturer and his selling agent.

That is all right, so far as it goes, but the fundamental principle governing the sale of a heavy merchandise is that while a lowered freight rate extends the radius of its markets, a raised freight rate reduces this radius in the same proportion. This is exactly what will follow the "five per cent rate increase," and its truth is beyond all question or doubt as existing in the minds of freight traffic men, prominent shippers, and others "in authority."

Under the terms of the recent decision, there is no doubt but that an equalization could be effected by the raising of the rates, where preferential rates have been given, and so making freight rates just as unchanging as are, in most instances, passenger rates.

For a long time shippers of clay products have wondered why the railroads could not adopt a flat freight rate per mile, just as they have a practical flat rate per mile for passenger service. At the present time, when a man buys his ticket from one city to another, it is only necessary for him to look up the distance that these cities lie apart from each other on the line that he intends to use. With the exception of some few states, where the rates are higher, 2 cents per mile is a safe figure for him to take, and he knows that if he is going 100 miles, he will have to pay $2.00.

The railroads have made so bad a mess of freight rates that men, who claim to be authorities, state that, for instance, in the case of "Pittsburgh rates east and west," it would take at least two years to so straighten out these rates as to make them positively equitable.

At this time it is hard to make any statement regarding the basis that will be used for the advance in rates. It is safe, however, to assume that very few of the preferential rates will be touched, as the influences which an action of this kind would bring to light, would not be to the liking of the carriers. By this is meant that as soon as the railroad rate affects the powerful shipper, he is apt to raise so great a disturbance as to bring other and smaller shippers to his side, and in the allied fight, the combination is apt to beat the carrier.

The saving clause, however, seems to be in that before any advance in rates can be made applicable, the companies will have to file and publish new tariffs, and these will be subject to protest by formal complaint made to the commission by the shippers, using the usual formal procedure.

Whether a complaint of this kind will be allowed to act as a stay, and so prevent the rates contained in any particular tariff complained of, from going into effect, remains to be seen.

One thing is almost certain, however, that unless formal complaint against these increases (or rather it might be said against individual increases) is made, the commission will be busy taking care of the formal complaints that are sure to be lodged with it, and be apt to assume that all advances in rates that are not made subject to protest, are acceptable to the shippers. As a consequence, these are very apt to go into effect on the dates specified in the various tariffs.

Attempts have already been made to have the proposed advances set aside—that is, the entire advance as it affects some one particular product—but in no case has the commission allowed a protest of this kind to stand; in several instances the commission has called the attention of the complainants to the fact that they still have a right to contest these advance rates, *but that the contests must be made in the form of individual complaints against individual rates.*

There is no doubt that many of the rates that will be published will be unwarranted, and it is the duty of every manufacturer of a clay product to watch every tariff change closely from now on until March 15th, and even after that. He should watch not only the rates from his own shipping point but, by finding out the rate base upon which his shipping point is figured, watch every change that affects that rate base.

If every manufacturer of a clay product, who finds that any proposed advance affects him seriously, would write to "Brick and Clay Record," the chances are that combinations of manufacturers could be formed that will, by bringing joint cases before the Interstate Commerce Commission, limit the expense of these petitions to a very small sum and, at the same time, attain the end which we all desire—that clay products be not made to stand more than their just share of this tax.

Never before, in the country's history, has a matter of this kind been put up so squarely to the manufacturers. The commission intimates that it will not take cognizance of any "industry aroused," or anything of that kind. It says, in short, "If you, individually, consider any of the proposed rates arbitrary, unwarranted, or confiscatory, we are glad to

listen to your case, and, perhaps, prevent these rates being put into effect, but you must be your own policemen, and you must be wise enough to be able to put your complaint into proper form. You must be generous enough to back up that form with a sufficient amount of money to pay a presentable lawyer to speak to you in this, the people's court."

To go back for a moment, "Brick and Clay Record" suggests that clay manufacturers take advantage of the fact that the editorial offices of this magazine offer, if nothing else, a sort of clearing house for information of this character. You do not know but what a clayworker who is, perhaps, fifty miles away from your plant, is affected by a rate increase applying to the same rate base as that which affects your shipping point. He, in turn, does not know anything about you. Yet, if both of you wrote to "Brick and Clay Record" saying that you wanted to find a way to file a claim against the increase of rates from a certain rate base point, "Brick and Clay Record" could put you in touch with each other, or, better than that, might be able to arrange matters so that a case could be prepared in the shortest time possible, and the expenses distributed in such a manner as to not make it at all burdensome to you.

It seems to the writer that "Brick and Clay Record's" freight tariffs and troubles department has now a better chance to serve the industry than ever before.

The point is that, unless individual complaints are filed, some very exorbitant rate increases are going into effect. The only way to stop this is by concerted effort, and "Brick and Clay Record" holds out its hand to the industry, asking that it be allowed to help in this great protective movement.

All of this is writen on the assumption that, in putting some of the rate increases into effect, the carriers will work a hardship on some shippers that will, in some instances, curtail markets that are the very life blood of certain manufacturers of clay products. If the commission is allowed to remain in ignorance of these hardships, a wrong is inflicted that was not, and could not be foreseen when the decision permitting the "five per cent rate increase" was made.

It does not mean, however, that "Brick and Clay Record" is against the increase, nor does it want to array the industry against it. In the main, the increase is for the Nation's good. It means better equipment, fewer delays, big orders for buildings, for culverts, for new tracks and better safety devices. As a result of it, we will all share in the carrier's prosperity, for the money that comes in from better freight rates, will flow rapidly into the very lines that we are manufacturing. More rails, more steel cars, more locomotives—all of these things mean more firebrick for blast furnaces, more brick for stations, for warehouses and docks.

The carriers are as much a part of the body politic as the man who rides in their cars or ships his goods over their lines. Their better fortune is his own.

The only problem is to distribute the burden of this added income, so that no one pays more than he can confidently expect will be returned to him, or that, through ignorance, his lot be made harder, that some one else may profit.

Coming Conventions That Will Interest You

Jan. 12. Iowa Clay Products Manufacturers' Assn., at Ames, Ia.
Jan. 13. Iowa Clay Products Manufacturers Assn., at Ames, Ia.
Jan. 14. Iowa Clay Products Manufacturers' Assn., at Ames, Ia.
Jan. 15. Western Paving Brick Manufacturers' Assn., at Kansas City, Mo.
Jan. 16. Western Paving Brick Manufacturers' Assn., at Kansas City, Mo.
Jan. 19. Northwestern Clay Association, at Minneapolis, Minn.
Jan. 20. Northwestern Clay Association, at Minneapolis, Minn.
Jan. 22. Refractories Manufacturers' Association, at Pittsburgh, Pa.
Jan. 26. Canadian National Clay Porducts Assn., at Toronto, Ont.
National Association of Builders' Exchanges, at Columbus, Ohio.
Jan. 27. Canadian National Clay Products Assn., at Toronto, Ont.
National Association of Builders' Exchanges, at Columbus, Ohio.
Jan. 28. Canadian National Clay Products Assn., at Toronto, Ont.
National Association of Builders' Exchanges, at Columbus, Ohio.

Feb. 4. Wisconsin Clay Manufacturers' Assn., at Milwaukee, Wis.
Feb. 5. Wisconsin Clay Manufacturers' Assn., at Milwaukee, Wis.
Feb. 8. Illinois Clay Manufacturers' Assn., at Springfield, Ill.
National Builders' Supply Association, at Chicago, Ill.
Feb. 9. Illinois Clay Manufacturers' Association, at Springfield, Ill.
National Builders' Supply Association, at Chicago, Ill.
Feb. 10. Illinois Clay Manufacturers' Association, at Springfield, Ill.
Feb. 15. National Brick Manufacturers' Association, at Detroit, Mich.
American Ceramic Society, at Detroit, Mich.
Feb. 16. National Brick Manufacturers' Association, at Detroit, Mich.
American Ceramic Society, at Detroit, Mich.
Feb. 17. National Brick Manufacturers' Association, at Detroit, Mich.
American Ceramic Society, at Detroit, Mich.
Feb. 18. National Brick Manufacturers' Association, at Detroit, Mich.
American Ceramic Society, at Detroit, Mich.
Feb. 19. National Brick Manufacturers' Association, at Detroit, Mich.
Feb. 20. National Brick Manufacturers' Association, at Detroit, Mich.



Hollow Tile Dairy Barn Built at Kankakee, Ill., Which Accommodates One Hundred Head of Cattle.

The Model Dairy Barn*

Built of Burned Clay, This Structure Typifies the Upward Trend in the Construction of Farm Buildings Toward Permanency and Fire Resistance

IT is probable that in the past few years no single class of building has advanced so rapidly toward the standards of sanitation and safety as have dairy farm buildings. Two factors have necessitated these reforms. One has been the pressure from without in the form of laws, regulations and inspections requiring sanitary surroundings throughout the processes of dairy supply. The other stimulus has come from the dairyman whose experience has taught him the economy of protecting his investment with practically fireproof construction which will have the minimum of upkeep expense after the first cost.

In barn building, sanitation is effected by so constructing that: (1) there is no chance for absorption of liquids on the ground floor or walls; (2) there is good provision for floor drainage and floor flushing; (3) there is plenty of air and sunlight admitted; (4) there is convenient provision for the disposal of manure. Economical safety is accomplished by building all exposed parts of practical fireproof construction. All outside walls and all floors and fittings on the ground floor should be wholly non-combustible. It is illogical to argue that the roof must be fireproof for, not only would the expense be beyond reason, but with a loft filled with so combustible a material as hay, a fireproof roof would be of little service. There should be, however, an efficient firestop between the hay loft and the ground floor.

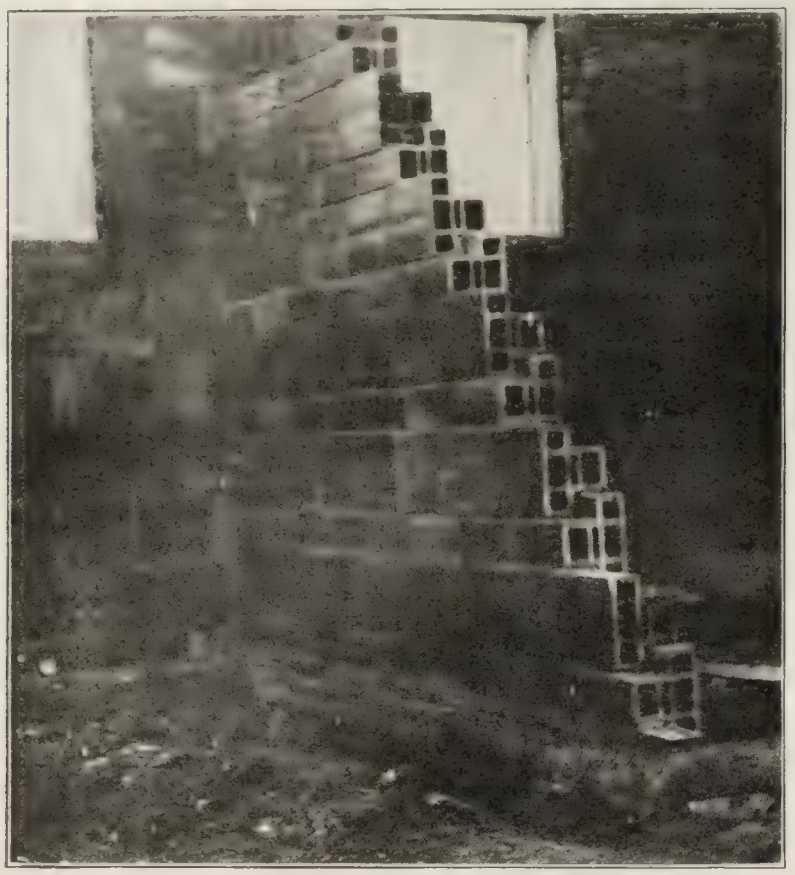
During the present year there have been, to the writer's knowledge, six dairy barns similar in type to the one here described built in northern Illinois and southern Wisconsin. Most of them were on private dairy farms. The one here described was built on the farm of the Eastern Illinois State Hospital for the Insane at Kankakee, Ill. The plans and specifications are the product of the office of State Architect James B. Dibelka. The building contractor was G. A. Cleland of Kankakee, Ill.

The barn accommodates one hundred cattle, its ground dimensions being approximately 200x35 feet with ten feet of head room on the ground floor and twenty feet from floor to peak of hay loft. The plan of the barn economizes every inch of space to the utmost advantage. Every class of material entering into its construction was selected as being the best for sanitation and safety and yet the most economical to accomplish the purpose.

The architectural appearance of the building is quite wonderful and cannot be well illustrated in black and white reproductions for, aside from its splendid form and proportions, the color is most attractive. Viewing it from the country side one is struck by its quiet brown walls—almost golden in the sunshine—surmounted with a roof of subdued tone. This barn is accompanied by two concrete silos which, while contrasting pleasantly, might have harmonized with the walls of the barn had they been built of silo tile.

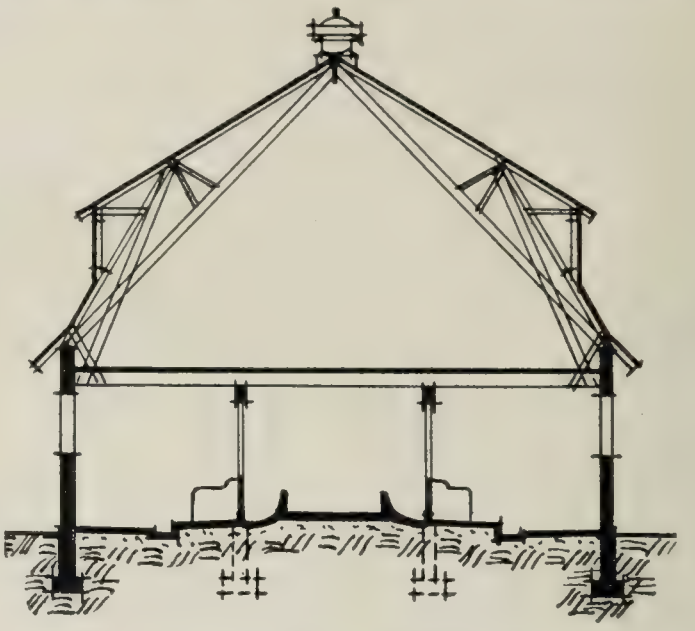
*Republished from the "National Builder" by special permission.

The real construction feature of the barn is the wall, built of interlocking tile. The tile are vitrified salt glazed clay. All are of the same color but vary in shade from a light buff to brown just enough to give a pleasing light and shade effect to the walls. According to strength tests made by the University of Illinois, this tile is capable of supporting over 1,000 pounds per square inch of surface. The tiles lay up



Interior Partition Wall, Showing the Insulating Air Spaces.

with four inch mortar beds which are so grooved that each mortar joint is mortised and extends only part way through the wall, making the strongest possible joint. The tile units combine to make the twelve inch outer walls so that there are no joints, either horizontal or vertical, which extend through the wall, each joint being broken by a dead air chamber with solid tile beyond. The five horizontal dead air spaces throughout the wall make of it an almost perfect



Cross-Section of Barn, Showing Roof Construction.

insulator which preserves all of the natural barn heat, so maintaining a regular temperature against severe winter changes. In the summer these insulating walls repel the sun's heat, keeping an inner temperature from ten to twenty degrees below the outer shade reading. The inner partitions are eight inch walls made of the same tile but combined differently as shown in the illustration. The glazed tile has a moisture absorption under two per cent. A hose can be turned on them to wash them clean. The tile lay up very rapidly, each tile being the same volume as ten brick.

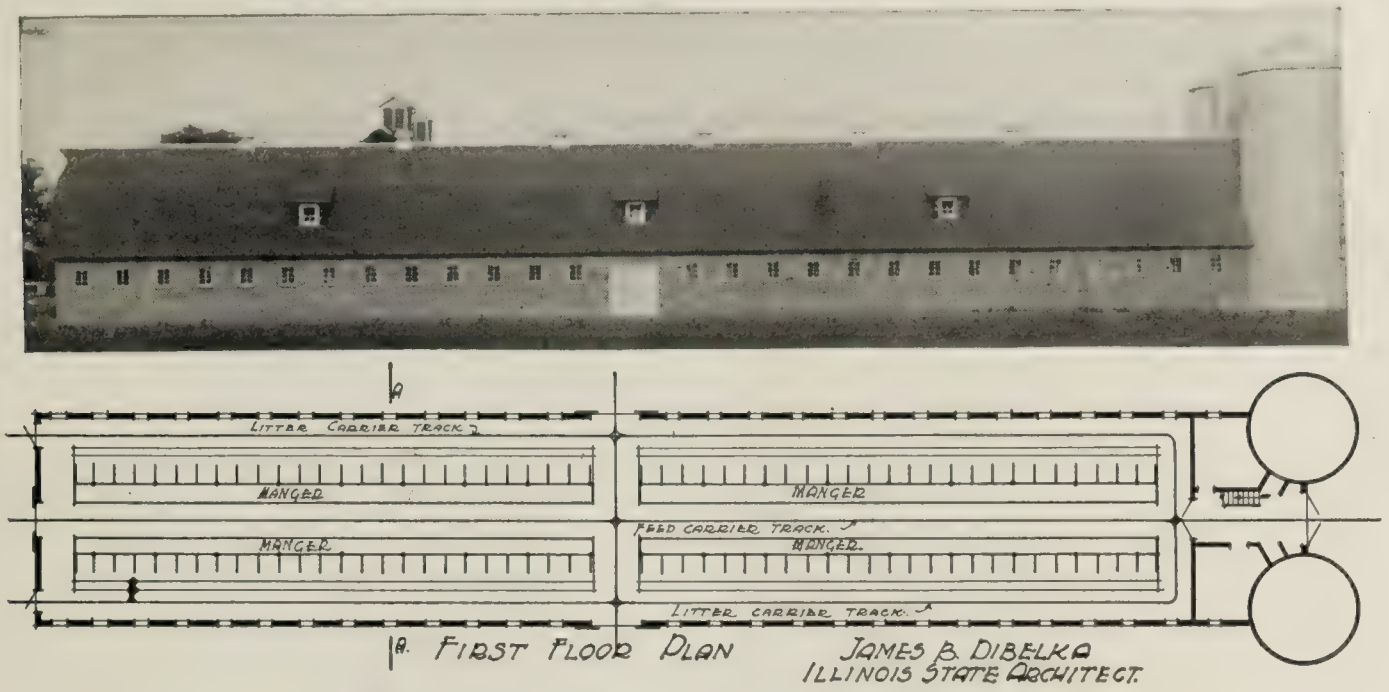
The ground floor is of ordinary rich mixture concrete, trowel finished. After the under-floor drains were laid eight inches of cinders were packed wet and all stanchions, iron columns and floor attachments fixed in place. Then the concrete floor was poured with forms for gutters and copings. Where the floor met the tile wall the concrete was troweled



Although the Cubical Contents of This Barn is Very Large, No Artificial Heat is Required at Any Time During the Year, Owing to the Insulating Power of the Hollow Tile.

up over the first course of tile as a coping drain. The ground floor fittings can be seen more plainly in the illustration than by description.

The second floor is of ordinary joist construction, ceiled below and above, except that underneath the flooring is ventilated at the peak by galvanized iron ventilators. The resulting structure approaches the pinnacle of the three virtues of sanitation, safety and economy. Neither solid nor liquid waste can penetrate beyond the surface and all surfaces can be flushed clean. No fire can start on the ground



Side View and Floor Plan.

spread a thick asbestos sheeting as a firestop between the hay loft and the ground floor. The roof is of ordinary rafter construction ceiled with dressed and matched lumber, covered with a good quality of roofing paper and shingled with asphalt shingles. The loft is lighted through dormer windows and floor nor from the outside. There is the minimum chance for depreciation, no painting, renailing or repairs. The temperature economy is of the utmost importance, for the comfort and good of the cattle where no artificial heat is furnished, and this construction insures the best.

Industrial Course in Ceramics at University of Illinois

The industrial course in ceramics to be given at the University of Illinois, Champaign-Urbana, Illinois, January 11th to 23rd, 1915, will be under the direction of Professors A. V. Bleininger, Ceramic Chemist, Bureau of Standards, Pittsburgh, Pa., and R. T. Stull, Acting Director, Ceramic Courses, University of Illinois, Urbana, Illinois.

The two weeks course is intended to cover, in an elementary and practical manner, the scientific principles underlying the practice of clay working as far as the structural materials are concerned. The processes of clay testing, preparation, molding, drying, burning and decorating are to be treated. It is open to all who are engaged in factory operation. No requirements are made as to previous training, it being assumed that all who wish to take part possess the education offered by the public schools. Instruction will be free and no charge of any kind will be made. It is expected, however, that any injury to apparatus will be made good at the cost price.

Ample apparatus, such as pyrometers, gas analysis apparatus, draft gages, anemometers, shrinkage calipers, volumenometers, balances, etc., will be provided.

Each participant wishing to take drawing and possessing a set of drawing instruments is requested to bring it. Sets of such instruments may be purchased from local dealers at moderate prices. Every person taking drawing will also be required to get a small drawing board 17x22 inches with T square, which can be secured at the local stores.

The university has been fortunte in securing the co-operation of Prof. Edward Orton, Jr., Director of the Department of Ceramics, Ohio State University, who will lecture on the important subjects of the origin, classification, properties and testing of clays.

The work of the course will consist of lectures, laboratory work, practice in firing kilns, and informal gatherings for question asking. All who come will be made welcome and it will be the aim of the teaching staff to look after the individual wants of each person.

It is suggested that applications for places in this course be made as soon as possible. As there is only limited room and since Illinois applicants are to be considered first, the suggestion made above is clearly necessary.

Persons who are desirous of testing their own clays might send samples of their materials to the ceramics laboratory in time to be used by them in the laboratory work. Not less than 10 pounds should be forwarded, preferably in the state as delivered to the pugmill or molding machine.

Room and board can be obtained either in Champaign or Urbana at rates not in excess to the amounts commonly charged in other towns.

Upon arrival at Urbana, it is suggested that each visitor proceed at once to the ceramics building for instructions and advice.

For further information, address R. T. Stull, Acting Director, Ceramics, University of Illinois, Urbana, Illinois.

The two weeks course in Highway Engineering, offered by the Department of Civil Engineering, will also be given January 11th to January 23rd, 1915. Those in attendance at the Industrial Ceramics Course are welcome to attend any of the lectures in which they might be especially interested. Programs of the short course in Highway Engineering may be had by applying to Prof. Ira O. Baker, Dept. Civil Engineering University of Illinois, Urbana, Illinois.

Brickmaker Accepts High Office

President of Illinois Brick Company Selected by Mayor of Chicago for New Board of Education

CHICAGO has always been known for doing things in a big way. Its skyscrapers were world famous before New York had emerged from its six and eight-story skyline. It looks across Lake Michigan to an unbroken horizon, whereas New York has to look across Bath Beach and Bensonhurst—not to mention Coney Island—before it gets a clear view of the point at which ships come up, mastheads first.

Chicago Builders' Club is a large institution. It does not disguise its real objects under the pseudonym of "Builders' Exchange," or "permanent exhibit," but contents itself with being a club. It fosters the boyhood spirit that lies more or less latent in every man, and which encourages him to play.

Seldom is the question of business raised in the Builders' Club. Much more often is heard the question as to a golf score, or a remarkable run of luck at Kelly pool, or the like.

Once in a while—in fact often—the Mayor of Chicago crosses the narrow street that lies between the Chamber of Commerce building (wherein the Builders' Club has its being) and the County building (wherein the Mayor has his office). Nearly every time that His Honor crosses Washington street, he takes back with him some shining light of the Builders' Club and transforms him from a careless, laughter-loving club-member into a solemn, staid and important city official.



William E. Schlake.

Nor is this done without the due knowledge of the members and, frequently, with the full consent of the chosen party.

Early in December, Carter H. Harrison, Mayor of Chicago, finding a hollow place in the midst of his Board of Education, caused by the purloining of Dean Sumner (who now becomes a Bishop and goes elsewhere), looked at the Builders' Club, and seeing a shining light in William E. Schlake, president of the Illinois Brick Company, and, incidentally, president of the Builders' Club, decided to take him. The club replied by inviting the Mayor and a host of other city officials to a banquet given on December 16, at which William E. Schlake was the guest of honor, and His Honor, the Mayor, principal speech maker.

Geo. Warren presided at the speaker's table during the service of the meal, with the Mayor at his left, and, at the close of festivities, resigned his chair to the toastmaster of the evening, William D. Gates, of the American Terra Cotta and Ceramic Company.

Seventy-eight members and guests were present, and it was a most enthusiastic gathering.

The Mayor, in mentioning Mr. Schlake's previous political activities, spoke of the time when Mr. Schlake was one of the "honest minority" in the City Council, which was depended upon to uphold the Mayor's veto, and to Mr. Schlake, Mayor Harrison said, is due much of the credit for the killing off of many bills that, had they become laws, would have seriously interfered with the growth and well-being of the city of Chicago. To quote him:

"As has been told here tonight, later on Mr. Schlake gave up political life and entered into a more active work in the business field, where he has prospered and where, we are informed, he has made a name and reputation as a business man of the highest standing. We are informed that he has tied to himself with bands of steel, men whose esteem is worth having. He has earned this wider and greater reputation fairly and well, but let me tell you that nothing he has ever done, and nothing he ever will do in his private business life nor as a member of the Board of Education, nor any higher service that the people of Chicago may at any time call upon him to perform—no service he will ever render will add or take away from the remembrance of the great service he rendered the great City of Chicago as a member of the City Council when the City of Chicago needed friends, sturdy, true and tried in that body of men."

Mr. Schlake is well known among brick men, and the clay-working fraternity is to be congratulated upon the appointment of so ardent a supporter of brick as is Mr. Schlake, to an important position upon the Board of Education. Chicago, as is well known, spends millions upon its public schools. They are all of brick—faced with facebrick all round—and are models of school house architecture.

As a practical brick manufacturer (Mr. Schlake's company controls 22 yards), there is little danger of the substitution of inferior material in the schools that will be built during the time he serves upon this board. He and his company are public spirited, contributing largely to all enterprises that have for their object the furtherance of the use of burned clay products. A striking example of this is that Mr. Schlake's company recently subscribed $1,000 to the Panama-Pacific Clay Products Association.

When it is remembered that the publicity that the Panama-Pacific House will bring to brick, spreads its benefits over a wide sections of the country, the generosity of Mr. Schlake's gift will be appreciated.



An Artistic Effect Obtained with a Terrace Three Flights High, Built of Ordinary Red Pressed Brick.

Using Brick for Terraced Approaches

A Feature of the Home, in the Construction of Which There Is No Substitute for Brick

IN the creation of artistic effects about the house and garden, brick plays an important part. The size of the multiple and the almost endless variety of color obtainable makes this material one of wide adaptability. Whether it be for the construction of a wall, a seat, a walk or pergola, brick is the one material with which it is possible to secure the greatest harmony in color, with the house, especially if it be built of brick, and the green and myriad colors of the surrounding foliage and flowers.

By Charles Alma Byers

THE feature of a home that attracts the very first attention from a passer-by is the approach. This is especially true if the grounds in front be terraced. And the degree of attractiveness of this approach usually decides to a great extent one's general impression of the exterior of that home. This feature, therefore, is one that deserves careful consideration on the part of the builder.

No other building material seems quite so satisfactory for creating an attractive approach to a house, particularly where the grounds are terraced, as brick. This is perhaps due to the fact that brick may be obtained in so great a variety of colors and textures and may be wrought into so many different designs. In fact, there is hardly any limit to its adaptability for the construction of terraced approaches.

The accompanying photographs show some rather elaborately designed approaches which are almost entirely of brick construction. The grounds in every instance are terraced, and the approach consists in each case of a flight of winding steps, bordered with low walls. Incidentally, it will be observed that approaches of this kind lend themselves admirably to a liberal use of flowers and shrubs, which, when properly handled, constitute features that are highly decorative. And while the pictures show only the more elaborate arrangements, which, of course, are more difficult to handle satisfactorily, it should at the same time be borne in mind that the simple and dignified approach, be it either formal or informal, can also be better designed with the use of brick than with any other material.

The first illustration (Fig. 1) shows an approach consisting of a broad walk that is broken by three flights of steps before it reaches the front veranda, both walk and steps being of brick. The low walls that serve as railings to the steps are constructed of common brick, surfaced with stucco, and are coped with other brick set edgewise. Ordinary pressed red brick is used, and the predominance of this color produces a very attractive effect. The approach is bordered by a profusion of shrubs



The Very Entrance to This House Indicates a Love for the Beautiful.



The Winding Approach to a Haven of Rest Through an Avenue of Burned Clay. The Impressions Gained from the Entrance Speak Well for the Interior of the House.

and vines, and an electric-lamp standard is placed at the foot of the approach near the sidewalk.

Another illustration (Fig. 2), shows an approach that is quite similar to the preceding one, except that the walls are higher and are constructed entirely of brick. In this case, however, there are four flights of steps, instead of three. The brick used here is of a bluish-red color—the mortar a blue-black.

A particularly attractive approach, of many turns, is shown in the illustration (Fig. 3). The walk and steps in this instance are of white cement, the bordering walls being constructed of a rough-textured brick, laid in dark mortar. The walls are very low, and the arrangement is unusually graceful. To meet the different elevations of the terraced grounds, the top of the walls comprises a veritable series of steps, and the numerous corners thus created form excellent locations for potted shrubs. The walls are further enhanced with a delicate tracery of close-clinging vines, and upon one of the corners is supported a small lantern-like lighting fixture of odd design. The house itself is constructed largely of brick, and the whole effect is most pleasing.

An unusually massive arrangement is shown in the illustration (Fig. 4). Were it not for the fact that the house itself is of brick construction, and of rather odd lines, there would seem to be entirely too much brick work in this approach, but with all points considered, the general appearance is very effective. At the top of the first short flight of steps is a sort of broad arch in the center of a long massive wall, and in a recess beneath this arch, is constructed a small fernery. The grounds are quite steep in their rise to the house level, the negotiation of six flights of steps being necessary to reach the house. The walk and steps are very broad, and are constructed of white cement. The walls are decorated with a few vines, and an electric lamp, of lantern design, embellishes the top of the wall above the arch.

The illustration (Fig. 5) shows a rather simple approach, the grounds in this case being but slightly terraced. Here again the walk, steps and walls are entirely of brick, the whole arrangement being embowered in a mass of foliage.

Another illustration (Fig. 6) shows a rather elaborately designed approach wherein the walls are constructed of a rough-textured brick. The walk in this instance is floored with red tile, set in diamond fashion, while the steps are of red cement. Just inside the rather high wall that borders upon the sidewalk is a long seat built of brick and tile, and to the top of the walls clings an arrangement of vines. The uniformity of color in the masonry in this instance is especially effective, and creates a charming background for the green foliage.

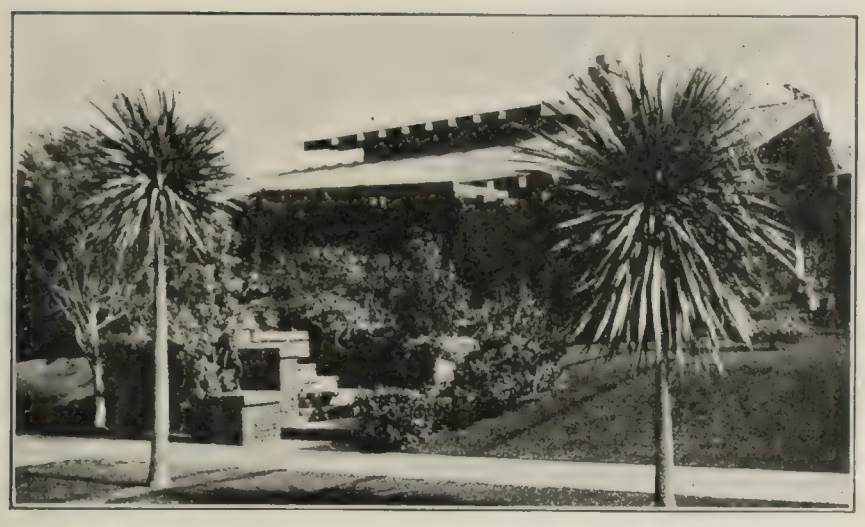
These illustrations, aside from portraying a number of very attractively designed approaches for terraced grounds, are interesting as showing, in still another way, the universal adaptability of brick for building purposes. No other building material can be used in so many ways nor with more satisfactory results than can brick. It constitutes a material that lends itself peculiarly to either the formal or informal scheme, and there is no feature about the grounds of a home but for which it is admirably suited. The houses to which these approaches belong are constructed of many different kinds of material, and yet,



An Approach That Harmonizes Well with the House is a Saving Feature in This Instance, as the Massive Arch is Constructed of the Same Material as the House in the Background.

strange as it may seem, the brick work here shown blends most satisfactorily with the different styles of architecture employed. Indeed, with few exceptions, brick harmonizes well with all outdoor surroundings. This is particularly true of the newer textures, which so closely approximate the moss, the bark and the time-worn dead-wood that form the rougher background, against which Nature sets her richer, warmer tones.

This "rustic finish" in brickwork lends itself to landscape gardening as no other material has, up to the present time. It opens a new field to the brickmaker, who is receiving an increasing proportion of the residence work.



A Tropical Effect That is Further Enhanced by "Built with Brick" Approach.



A Very Pleasing Effect of Brick Wall and Terrace, a Relief from the Dazzling White of the Walk.

Clayworkers Meet with Corn Show.

Taking advantage of the Annual Corn Show which will be held on February 10 and 11, and which brings together a large number of farmers and others interested in agricultural prosperity in Western Ontario, Canada, and, therefore, interested in clay products, the Western Ontario Clay Workers' Association, will hold its annual meeting and also a burned clay exhibit at Chatam, Ont., on the same dates. The decision to follow this plan, however, was not unanimous, as this was the subject of considerable debate at the last convention of the association, when the members who advocated the exhibiting of claywares at the corn show won out.

The clay products exhibits will be decorated with "Build with Brick" and "Tile your Farm Signs," bearing their message of burned clay efficiency to all visitors. The exhibit is not limited strictly to members of the association—it cordially invites participation on the part of all clayworkers in the Dominion of Canada, the idea being to make this exhibit a great boost for clay products in Canada regardless of point of manufacture, a spirit which is truly in accord with the reciprocity of burned clay.

Iowa Clayworkers Meet January 12.

The annual meeting of the Iowa Clay Products Manufacturers' Association will be held at Ames, Iowa, on January 12, 13 and 14. The sessions will be held in Engineering Hall Auditorium of the Iowa State College, headquarters also being maintained in the Engineering Hall.

The morning of the opening day, January 12, will be devoted to routine business. In the afternoon at 1:30 o'clock will be given the address of the president, B. C. Keeler, of Mason City, Ia., which will be followed by papers devoted to the discussion of burning problems. It is the desire of the association that its members give due consideration to the advantages to be gained by giving their engineers and burners the opportunity of hearing these papers and many others equally instructive which will be read at following sessions. In the evening, Frank W. Darling, of the Clay Product Company, of Chicago, Ill., will talk on the marketing of clay wares.

The program for the morning of January 13 will be provided and conducted by the Ceramic Department of the Iowa State College. The afternoon will be devoted to papers on plant problems. In the evening, a moving picture show will be given in the Engineering Hall. Advance reports indicate that this show will be well worth attending.

The morning session of Thursday, January 14, will be given over to the Clayworkers' Institute of the Iowa State College, the program including such celebrities as Prof. Homer F. Staley, M. F. Beecher, Prof. A. Martson and Prof. J. B. Davidson. The topics of these papers indicate a rare treat to those who are fortunate to attend this session. The afternoon will be devoted to the discussion of advertising, cost and insurance problems, after which will come the reports of various officers and committees, election of officers and adjournment.

Since there are practically no hotel accommodation at Ames, visiting members and their friends will be provided with rooms in the campus houses of the college. There will also be ample provision for meals.

Sign Orders Will Be Bulked.

The manufacturers of "Brick and Clay Record's" blue and white, sheet steel "Build with Brick" signs and those that bear the slogan "Tile Your Farm" have asked that we hold all orders as received, and send them in in batches, so that imprinting the names of the individual firms may be done at one time. As a consequence, all orders received during January will be held until the last day of the present month, and those received in February will be held until February 28, and so on.

"Good Roads Night" at Brickmakers' Convention.

Tuesday night, February 16, has been set aside as "Good Roads" night, at Detroit. A series of talks, illustrated with lantern slides, will be shown, under the auspices of the National Paving Brick Manufacturers' Association, which holds its quarterly directors' meeting on Monday, February 15, at 10 A. M. The meeting and the "Good Roads" celebration will be at the new Hotel Statler, the headquarters of the National Brick Manufacturers' Convention, which is to be held the week of February 15-20.

What Is the Matter With the United States?

World-Famous Advertising Man, Who Twice Addressed Clayworkers' Conventions, Scores Nation's Inertia in the Face of a Great Opportunity

By Herbert N. Casson

Republished from "Associated Advertising."

"WHAT is the matter with the United States?"

As I have been residing in London since the beginning of the war, I have been hearing this question asked on all sides. I have never heard any satisfactory answer. No one seems to know.

Why are the American factories not running night and day? Why are the railroads not opening up new territories and getting ready for the millions of immigrants who have already made up their minds to leave Europe as soon as the war is over?



Herbert N. Casson

Why are there not fifty American drummers in London right now, trying to sell $200,000,000 worth of American goods in place of the goods that were bought last year from Germany and Austria?

Why have advertisers become quitters, just at the time when their advertisements were most needed and most effective in cheering on the business forces of the United States?

From the European point of view, the United States is a haven of peace and security and prosperity. It has no troubles that it dare mention to Belgium or Austria or France or Germany or Servia or Great Britain or Russia.

Every tenth Briton has enlisted. Every tenth Frenchman is at the front. Every tenth Belgian is dead. What does the United States know of trouble?

If I could afford it, I would charter the *"Mauretania"* and *"Lusitania,"* and convey a party of 5,000 *American Advertisers* to Europe for a trip of education. I would give them a week in London, a week in Paris, and a week in Antwerp.

I would let them look at the United States from the scene of war. I would give them a look at *real trouble.* I would let them see trains, ten at a time, five minutes apart, packed with the maimed and the dying.

I would let them hear, from fragmentary survivors, the incredible story of battlefields one hundred and fifty miles wide, and armies that are greater than the entire population of Texas.

I would let them see graves one hundred yards long and full, and Belgium, the country that was, nothing now but twelve thousand square miles of wreckage.

Then, when they began to understand, to some slight extent, the magnitude and awfulness of this war, I would say to them:

"Now go back and appreciate the United States. Realize your opportunities. Don't start digging trenches when nobody is firing at you. Don't fall down when you have not been hit. Don't be blind to the most glorious chance you have ever had in your life."

"Go back and advertise. Get ready for the most tremendous business boom that any nation ever had. Build your factories bigger. Train more salesmen. Borrow more money. Go ahead and thank God that you are alive and that your family is alive, and that you are living in a land that is at peace, at a time when nearly the whole world is at war."

Starting the Panama-Pacific House.

Ground has been broken for the model, modern, low-cost, fire resistant home that is to be built at the Panama-Pacific International Exposition. This is the news that has reached Herman L. Matz, the president of the association having the work in charge. Photographs of the actual starting of the work were promised, but did not reach Chicago in time to be included in this issue of "Brick and Clay Record."

Within the next week or two, the long promised prospectus will be mailed and clayworkers from Portland, Me., to Portland, Ore., will be called upon to subscribe to the fund that will complete this house, and start a publicity campaign that will do wonders for clay products.

It may be well, therefore, to be prepared for a good argument, based on a sensible proposition. You cannot extend your market without some advertising. What better advertising is there than a country wide demonstration that a brick house—ideally constructed from a standpoint of fire resistance—can be built for a very small sum of money? This is one of the things that the Panama-Pacific Clay Products Association will explain in its prospectus.

The Fire Insurance Contract

Wherein is Shown the Fallacy of Regarding a Fire Insurance "Policy" as a Promissory Note

By John J. Thomas

AT the very outset, I want to say that what follows must not be construed as a criticism of the fire insurance policy. It is, rather, a statement of what a fire insurance policy *is*, and, incidentally, what it *is not*.

It is, first, last, and all of the time, a contract. You are one of the high contracting parties, the fire insurance company the other.

It is not, for instance, a promissory note, signed by the insurance company, and agreeing to pay a certain stipulated sum, in case you have a disastrous fire.

And for this reason, since most men confuse the word "policy" with promises to pay, as in the event of life-insurance, it would be well if every business man acquired the habit of speaking of the document he receives from the fire insurance company as a *contract*, reading it as a *contract* and, most important of all, *living up to the agreements of the contract to which he is as much a party as the insurance company.*

Fire insurance, as it is being conducted, is honestly administered. It is to the interest of the fire insurance company to pay equitable losses. It is against public policy, and therefore against the interests of both the insuring companies and the men who carry insurance, for any insurance company to pay more than the actual loss sustained by fire. There is little use of going beyond that statement—if fires were profitable, there would be more of them. And a made-to-order fire might easily start a general conflagration.

For that reason, the insurance contract (you will note that I discard the word "policy") contains certain phrases which bind you, as business men, to do certain things before you can recover under the contract.

In the New York standard fire insurance contract there are one hundred and twelve lines of finely printed matter, that set forth the conditions of that contract. They are concentrated—"boiled down" if you will—but they are far from being technical, and certainly they are not beyond the average man's intelligence.

The average business man, about to sign a contract calling, for instance, for a hundred dollars' worth of repair work, will read every line of that contract, before he signs it. Yet in the case of his insurance contract, he generally contents himself with glancing at the "amount for which it is drawn"—to use a popular term—and puts it away in his safe.

A Chicago man, carrying fire insurance policies on forty different pieces of property told me, a few days since, that it "wasn't a case of reading the policy, so much as it was seeing that your insurance was placed with a company that would 'settle' your losses promptly and without your having to go to court to prove your case."

That man's business calls for the drawing up of contracts, in which he agrees to furnish labor and materials and to do certain work, while the other party to the contract agrees to pay in a certain manner and at a certain time, under certain other stipulated conditions.

He, in his own mind, carries fire insurance "policies." When he has a fire, he will know that these were "contracts" in which he agreed that the insurance company would not be liable for one penny, even in the event of a "total loss," in case he failed to perform certain acts which he agreed to do, when he accepted the "policy"—which acts were duly set forth in those one hundred and twelve finely printed lines.



John J. Thomas

What are these provisions? Among them are, for one thing, the provision that the contract must be made out in the correct and complete name of the concern—that if it be a partnership, the full name of each partner must be mentioned. Any change in a partnership, involving a new interest in ownership, must be written into or on the contract, or the contract is rendered void by such omission. If the title to the property be other than fee simple, the contract must give the exact nature of your title or interest. If the interest in the land or in the buildings is leasehold, it is necessary to mention it in the rider form which is pasted on the contract. *The violation of any of these provisions voids the contract.*

All mortgages, trust deeds or outstanding issues of bonds on buildings, or equipment, or both, must be mentioned in the contract. The assignment of a fire-insurance contract, as collateral security, without due notice to the insuring

company, *voids the insurance.* The insurance company must be notified of all changes in title, interest or possession of property covered by the insurance contract, which changes take place after the contract is drawn. The courts have held that it is incumbent upon the insurance company to acquaint itself with the exact state of ownership at the time the contract is signed. *This means that, when you borrow money on your property, you must notify the insurance company, otherwise your fire insurance contract is voided, and by your own act.* These are a few of the provisions, and there are many more.

I have said that the fire-insurance contract is in no sense of the word a promissory note. It does not say that the fire insurance company will pay a stipulated sum in case the man or firm who carries the insurance has a fire that is, as the popular phrase is—"a total loss." Rather, it says that the company will pay *not to exceed a certain amount,* to the extent only that the second party to the contract can *prove* loss by fire and upon his ability to *prove compliance* with the terms of the contract.

If any other business contract carried the proviso that it would be null and void, in case any of its provisions were violated, the business man would be somewhat particular to carry out his part of the performance agreed upon. Why, then, does he ignore the provisions of his fire insurance contract?

If what has been written is sufficient to make you look at your contract, principally to learn wherein you are violating it, you will find, way at the top of the one hundred and twelve finely printed lines, something that will arrest your thought. It has to do with what *valuation* the fire insurance company will "settle" any fire loss that you may sustain.

This line reads "This company shall not be liable beyond the actual cash value of the property at the time any loss or damage occurs."

What, in your mind, is the "actual cash value?" Is it what you paid for the property? Is it what you consider it worth? Is it what you could sell it for, at auction, or forced sale? The courts have said that it is none of these.

The ruling is that it is what it would cost you to replace it, *new,* less a sufficient amount to cover depreciation. other words, it is what it would cost you to *replace the property in exactly the same condition as it was at the time the fire started.*

And remember, you have agreed, under the insurance contract, to *prove* this amount of loss.

What means have you of giving that proof? Considering the fact that a fire may result in the partial damage of a hundred different pieces of machinery, in the "scrapping" of as many more, in the destruction of part of a building, necessitating the tearing down, perhaps, of parts that are seemingly sound, the question of "replacing" *new* (or as good as new) all of these varied items is a gigantic one.

Add to this the question of depreciation, and who can, without some proper system of figuring this deceptive item, state positively how much better that *new* machinery and *new* building is, than the partly worn machinery and partly old building that was put out of commission, at least temporarily, by the fire?

Yet this is the very thing you will be called upon to do —that you *agreed* to do, when you accepted the fire insurance contract that "covered" your property. In fact, it was mentioned in the second line of those one hundred and twelve lines of finely printed type matter.

It is well to dwell on this subject a moment longer. Many firms make allowances, in their cost accounting systems, for depreciation. An arbitrary percentage is deducted each year, to cover "depreciation"—sometimes five per cent, sometimes ten. *If this system is applied to fire insurance, it is bound to give radically wrong results.*

In the first place, the life of a machine may, or may not be five, ten or twenty years. The same may be said of the life of a building. Much depends in the first case, of the amount and kind of work performed, the consistency of the repairs, and the care in handling. In the second case, upon the climate, the repairs and the character of the material that was used in construction. How can an arbitrary percentage be made to cover both, or all? In paying a loss, it is fair to assume that the insurance company will not accept an arbitrary depreciation figure on one part of the risk, if that figured depreciation is palpably less than the real depreciation upon the machine or structure. On the other hand, if the figured depreciation is greater than the real depreciation, the man who has suffered one loss by fire, accepts a second loss in making a settlement.

To take as a basis for actual value the actual cash value of the building, as shown, perhaps, by a previous year's appraisal, less a settled amount for one or more years' depreciation, is sure to work to the detriment of the owner of the property, for it takes no cognizance of the possible *appreciation of value.* By this is meant the advances that are constantly taking place in the cost of construction, of basic materials and labor.

So you see, that unless you are an exception to the rule, you are not ready to *prove the actual cash value of your property at the time of the fire,* and must abide by a rule that is made to cover carelessness of this kind. The fire-insurance companies do not compel you to live up to the letter of the contract, even of the second line of the one hundred and twelve, and, as a consequence, it sends an "adjuster" to assist you in arriving at an "actual cash value" that will seem right to the insurance company, and which will, we fondly hope, be satisfactory to you.

The fact is—if it is not entirely satisfactory to you, you will not be very apt to say a great deal about it—for you will hate to confess how negligent or short-sighted you were, not to know something about so vital a part of your business.

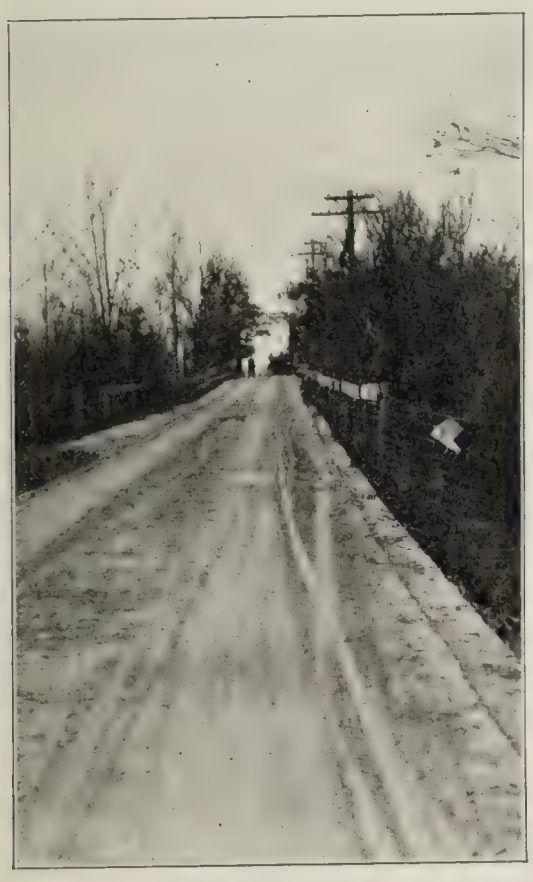
In the next article of this series, I will explain how this "actual cash value" of every piece of machinery—every bit of property—covered by your fire insurance contract, may be known to you, and guaranteed to you, every day in the year. And I will point out to you where, in many other places, you are jeopardizing your insurance by acts that are easily avoidable.

Now Is The Time—

When Shipping Orders are not so pressing, and you have a little time to turn around, to consider your part in the great "Build with Brick" campaign. Get out now, while the roads are hard, and tack signs on every highway that runs into or out of your town. Order your signs now, and get them in February.



A Completed Brick Road in Saline County, Illinois, Showing Dirt Road on One Side Which is Used in Dry Weather.

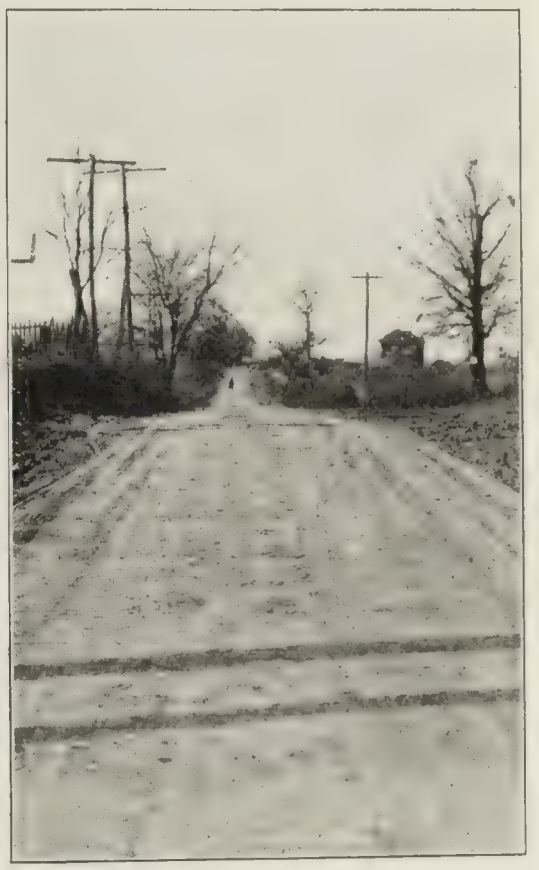


Approach to Bridge Widened to Fifteen Feet.

Better Brick Roads for Illinois

What One Rural Community is Doing to Augment a State-Wide Movement to Improve Country Highways

By Charles D. Stillwell*



No Difficulty in Getting to Town on This Road.

ILLINOIS has been mired up too long already. There is not a country boy or girl in the state who is not at this moment feeling the stultification emanating from bad roads. There is not a single phase of our life, economic, educational, social or religious, that has not in some way, all these years, been contributing to the "mud tax." Our people in this community say emphatically, "Give us permanent roads while we are alive to enjoy them, and thereby we can the more readily and effectively qualify for the Streets of Gold which we are promised in the hereafter."

Our state is to be congratulated upon having a governor who has caught the spirit of the hour, and given us the slogan for the road campaign, "Lift Illinois Out of the Mud." It is to be congratulated upon having a State highway commission and engineer who possess the foresight, wisdom, sagacity, integrity and enthusiasm to mold public sentiment for permanent road construction, and to bring the slogan of the governor to a speedy realization.

Harrisburg township in Saline county, Illinois, began the construction of hard roads in the summer of 1908. The first road build was of water-bound macadam, and was supervised by the State highway engineer. This road, one mile in length, cost the town about $6,000, notwithstanding the stone was furnished by the State from the quarry at the Southern Illinois Pentitentiary at Menard, at the actual cost of transportation. The engineering was also donated by the State; likewise the road machinery necessary for construction. The road did not prove a success, but of this we will speak later.

At the annual town meeting held in April, 1909, the electors of the town of Harrisburg voted 50 cents on each $100 of assessed valuation in the town for the construction of rock, gravel, macadam or other hard roads. This vote raised approximately $25,000, which has been expended in the construction of two brick roads in the town, aggregating two and one-half miles in length.

At the annual town meeting in 1912 the electors of this

*Republished from "Farmers' Review" by special permission.

town voted a levy of $1.00 on each $100 of assessed valuation for a period of five years. This levy will realize approximately $100,000 for the construction of permanent roads in the township. At the same time this last vote was taken the town voted six additional stretches of road, all of which commence at the corporate limits of the city of Harrisburg, county seat of Saline county, and radiate to different parts of the township in such a way as to accommodate the greatest percentage of the public highway traffic. Our commissioners have decided upon and are constructing a 9-foot brick roadway, built under standard paving specifications, with a concrete curb 8 inches in width at the top, set flush with the brick roadway, making a permanent roadway 10 feet 4 inches wide, over all, as the most satisfactory and most economical type of construction for the particular needs of the town.

We construct these brick roads on the right hand side of the roadway when looking toward the city and build a good dirt roadway 12 to 14 feet wide adjacent to the brick on the other side of the traveled part of the road. The dirt roadway is always in splendid condition, and takes much of the traffic when it is dry, thus relieving the brick road of wear when it is not altogether necessary for the comfort and convenience of the traveling public. The 10-foot road is sufficiently wide that even in passing of vehicles the one having to turn out can always have the inside wheels upon the solid road surface. The passing of vehicles upon the average country road is a small part of the service upon the



A Typical Harrisburg Road Before the "Pave with Brick" Highway Campaign Was Started.

roadway and very rarely do two vehicles pass at the same point, and it is our experience that even in times of extended soft weather this dirt roadway is cut up scarcely at all. Running a light grader over it about twice a year, set in such a way as to keep the dirt pushed up flush with the curb of the brick road where there may be slight uneveness, keeps the dirt roadway in perfect condition. The drainage of the road is provided for with proper side ditches, and culverts put in at the time the brick roads are graded and constructed.

This system, as voted in 1909 and 1912, connects up with the State Aid roads adopted by the board of supervisors, and approved by the state highway commission in December, 1913. While legislative committees were investigating the road laws of other states as a basis for the present State Aid road law, and while good roads associations were in process of formation throughout the state, we were building



Brick Road Near Harrisburg, Ill., in the Course of Construction. Brick in Foreground Are Ready for Grout Filler.

roads in anticipation of the inter-county system, which we felt was sure to come and which has come as a result of the provisions of the Tice law. It is with much satisfaction that we see our splendid system of brick country roads recognized by the state highway commission and connected up with the inter-county state aid system.

The tabulation of the various roads voted to be improved permanently and for the construction of which the tax has already been levied and partially collected, is more fully set forth as follows:

The first road built (of brick) is called the Harrisburg and Upper Equality Road, an inter-county one leading to White county, and covers a distance of one and three-fourths miles. This road was constructed in the fall of 1911 at a cost of $17,239.48, and for the period of over two years which this road has been in use there has been no need for any expenditures on the same for repairs.

The second road build, (of brick) the Harrisburg Cemetery Road, an inter-county one leading to Johnson county, from one-fourth mile within the city of Harrisburg, covers a distance in all of about three-fourths of a mile. It was constructed in the spring of 1912 at a cost of $8,815.92, and no repairs have been necessary on this road since construction.

The Harrisburg Galatia Public Road, leading to Franklin county, (also brick) extends one and three-fourths miles in all. One and one-half miles of this road, extending from the corporate limits of the city, were constructed in the summer of 1912 at a cost of $15,797.09, and so far no repairs have been required upon this road.

The Harrisburg and Lower Equality Road, (brick) leading to Gallatin county, extends a distance of two and one-half miles. It was constructed from the city limits to the Middle Fork of Saline river, a distance of a little less than one and three-fourths miles, in the summer of 1913, at a cost of $17,357.00. This road has been open to service about a year and no repairs have been needed to date.

The Harrisburg and Raleigh Public Road, (brick) leading to Hamilton county, extends to the north line of the town-

ship, a distance of two miles. It was completed a couple of months ago at an approximate cost of $19,000.

The Harrisburg and Whitesville Public Road, leading to Hardin county, extends a distance of two miles and includes one mile of rock road. One mile of this road was con-



A Water Bound Macadam Road, Built in 1908, Under the Supervision of the State Highway Engineer. It Required Repairs Within a Few Months After It Was Completed.

structed in the summer of 1908 of water-bound macadam, under supervision of the state highway engineer, the width of the roadway being 12 feet and the total depth of crushed stone, 10 inches. This road is difficult of drainage, being subject to overflow at certain seasons of the year, and has proved a disappointment to tax payers and road authorities. It is subjected to heavy traffic and but a few months after it was built was in need of extensive repairs. It is now in bad condition, in many places being worn into holes and depressions that extend practically through the courses of stone. Nothing short of reconstruction can make this a desirable piece of highway. It was our experience with this road that caused the people of our town to turn their attention to a more permanent type of construction, and after a thorough investigation and study of the various types of road construction, our authorities determined upon the type which we are now using as being the most economical and serviceable for our particular needs. The eagerness with which our electors grasp at the opportunity to provide for permanent highway improvement can readily be seen when it is stated that upon the first hard road vote which we had in the township, the proposition was carried more than seven to one, and that at the town meeting in April, 1912, when the proposition to vote $1.00 upon the $100 for five years was submitted, together with the system of roads above mentioned, the vote was equally as heavy in favor of the tax for the permanent road work.

Some idea of what has been done and what it is proposed to do for good roads in and about Harrisburg, may be gained from the following recapitulation:

The Harrisburg and Independence Public Road, leading to Pope county, is about seven-eighths of a mile in length.

The Harrisburg and Marion Public Road, leading to Williamson county, covers a distance of one mile.

Total mileage of the eight roads comprehending the proposed Inter-county system in the township, 25⅞ miles.

Total miles of road voted and partially constructed, 12⅛ miles.

Balance of system to be voted, 12¾ miles.

Total number of miles constructed, 7¼ miles.

Total mileage voted and not constructed, 4⅞ miles. Total cost of 7¼ miles constructed, $78,219.49.

Total cost of entire system of roads proposed in the township, approximately $250,000.00. Total tax already voted approximately $125,000.00.



A Brick Road Near Harrisburg, Illinois, with Shoulders and Dirt Road at the Side Unfinished. This Road Shows No Indications of Wear and Is Good for Ten Years.

Good roads in the State of Illinois now resolve themselves into a question of cost. We have at last secured the legislation necessary to enable us to build roads leading from some place to somewhere. The hodge-podge, piecemeal work which we were compelled to do under former statutes has been consigned to the scrap heap. The inter-county system is now possible, and liberal appropriations at the hands of the legislature for State aid may reasonably be expected. If other parts of the State will rise to the needs of the hour, as the tax payers of the town of Harrisburg in Saline county, way down in Egypt, have done, funds will be available for the State aid roads faster than the state highway commission can plan and supervise the work. The situation and needs of our community are not different from the situation and needs of any other rural community in the state. But when we hear of the opposition which good roads movements have heretofore encountered in the upper portions of the state where farm lands are worth two to three times what they are in this county, we are inclined to think our people are at least different, and we are grateful for the difference.

The Calendar Harvest.

"Brick and Clay Record" has been favored by a number of specimens of the calendar makers' art, notable among which are those of C. K. Williams & Co., of Easton, Pa., Roessler & Hasslacher Co., Chicago and New York, J. C. Steele & Sons, of Statesville, N. C., Clippert & Spaulding, of Lansing, Mich., and E. M. Freese & Co., of Galion, Ohio.

John A. Roebling's Sons Company has chosen for its calendar subject the towing of a freighter through the locks of the Panama Canal, and the calendar calls attention to the fact that Roebling wire rope is being used for this purpose. The illustration is in attractive color, and gives a very convincing view of the great ditch.

The Deckman Duty Brick Company, of Cleveland, Ohio, selected a scene amid the Highlands of Scotland for its calendar subject and, as in former years, was generous in the size of the calendar itself. The Deckman Duty Brick Company is certainly kind to the near-sighted individual who has to look up his dates on a wall calendar, as the calendars which this company has issued contain figures large enough, almost, for a blind man to see.

The Science of Cost Finding

The First of a Series of Papers On a New Phase in Clay Plant Cost Systems and Their Value

By Edward E. Sheasgreen

TO attempt to make brick without a full knowledge of its cost is as wrong, and as hard as the task placed on the Children of Israel—that of making brick without straw.

In taking up with clayworkers the great vital question of cost finding and analysis, the writer feels the full responsibility of the task.

He first wants to say, and to have it thoroughly understool from the start, that he is no brickmaker, nor tile, nor



Edward E. Sheasgreen

sewer-pipe maker, nor potter. No more is he a machinist, printer, woodworker, harness maker or banker. Yet in each of these great lines of endeavor, and many more, has he successfully applied the new science of cost finding and analysis.

No, do not expect that you are to be told *how* to make brick—that should be the task of one who understands brickmaking. You are to be told about cost analysis—of which the brickmaker would like to know more.

You will not be told how to "keep books." That should be the task of the bookkeeper or the accountant; and mighty few of them—good and faithful souls that they are—know how to devise a proper cost finding system so they can analyze a business.

You will not be told about sales forces and the increased volume of sales, or how to get a sales force to one hundred per cent efficiency—if that were possible. To tell of such things should be the task of a great salesmanager, and but mighty few of the greatest know how to devise a right cost finding system so that a proper analysis of cost can be made.

Neither will you be told about the science of credits—the science of how to make a man always keep his account paid up-to-date. That task is for the clever credit man—who also knows but mightly little about the matter of properly constructing a cost finding system and how to analyze correctly every part of a business.

So then, it is not the engineer, nor the accountant, nor the salesmanager, nor the credit man who knows how to properly analyze business conditions, but the man who thoroughly knows the science of cost finding and analysis.

Do not misunderstand the above assertion—nor believe me to be an egotist—for the above statement is no assertion, but a fact, or we would not have in this country, nearly twenty thousand failures a year, nor would we see capital "petering out" in about fifteen years calling for a re-organization, or the advent of a "new partner" with "new capital" into the business.

If the Apostle Paul walked up and down the land today preaching a business gospel, as he did Christianity, those of the new cost movement believe he would say: "The science of accounting; the science of salesmanship and service; the science of credits; and the science of cost finding and analysis; these four, but the greatest of these is the science of cost finding and analysis."

Why is the science of cost finding and analysis—this new science—the greatest of business sciences?

Because it is to business what astronomy is to ocean navigation.

The use of this new science makes it possible to know at all times just how far to go this way or that—whether it is safe to run nearer the sharp reefs of competition—or farther away.

Recently—quite recently—a steamer went down on our Pacific coast and many lives were lost. Through some twist of fate the captain was saved. The newspapers shortly after told that he had been tried and that it had been found of him that he had used the poorest kind of judgment in navigating his ship. So he lost his papers.

Now why this fate to him? Because he had *not* used the science of astronomy and navigation as he should. There are fixed laws to work by—laws of nature that *must be* followed implicity, or there will be a wreck, either by going on the rocks, or ramming into some other ship.

Do you know that in the financial seas there has never been recognized, until recently, many *natural* laws? Do you know that because each man has *thought* he knew what he was doing; has *thought* he had a right to rob some and give to others so long as he secured business, and had a

little "net" left over at the end of the year; has *thought* that he knew his cost and that his cost method was *the* method, is the reason we have had so many business wrecks an such a large number of these disasterous collisions?

The great ignorance among business men has been, and still is, the ignorance of what properly constitutes a cost finding system and how to thoroughly analyze a business. Many an engineer, many an accountant, many a sales manager, many a credit man, many a sagacious business manger may wince at this statement.

But just remember that for years back we have had first-class engineers.

Remember that for years we have had first-class accountants.

Remember that we have had first-class sales managers, credit men and general managers and great eyecutives for a long time.

And through it all—in spite of all these advantages—there have been many collisions in a business way, and many wrecks have resulted, some of them the most terrible of heart-breaking business failures.

Bradstreet shows that there were 14,551 failures in 1913, and the government reports show that about ninety-five per cent of the business men do not know their right cost. This condition exists not because men really hate their fellowmen, nor hate their competitor; not because men wish to be counted a failure rather than a success; not because they wish to lose their capital and that entrusted to their keeping by their friends. No, but just because they do not know how to do otherwise than they are doing, is why they have this bad record.

So we see men do not know, as well as they think, how to properly navigate their business ship on the financial seas. Some day they will all be wise—then the manager who goes wrong will, in turn, have his "papers" taken away.

The writer has gained his experience in the science of cost finding and analysis in the School of Hard Knocks. He knows what it is to be a "worker"; what it means to be the employer who hustles to meet the payroll while all other debts run behind, as the business got nearer the rocks. He has been guilty, as other men have been and still are guilty, of blaming the "help," the competitor, the supply man, the landlord, the laws of the state and nation for bad business conditions.

And then he got cost "light." Matters began to change. The more the new light was lived in the more it became understandable, and the great need was seen of getting other men to understand—to feel—to know the real naked, unvarnished truth about their business.

For nine years this new science has been faithfully studied, and for over five years preached and applied by the writer to nearly three hundred plants—"eight," "nine," and "ten" hour plants; big and little; good and bad; in the east, west, north and south—in many different lines.

The man who thought he knew all about cost has been converted. The accountant who pitied the cost man because he was *not* an accountant, finally admitted the simplicity of the new way and wailed aloud that he, an accountant, had failed to find the light by himself. These two men in a two by four plant, who counted themselves business men because they had a sign out over the door on which was the firm name and what it did, and who, with boxing gloxes, boxed each other about the plant (imagine *business* men doing that) for an hour or two a day, in six months' time after beginning the use of the "new-fangled" but wonderfully simple system were really business men serving their community and their families as they never had before.

And then the writer has met in his work those fine men who, at the head of nearly one thousand workers—a smoothly working organization—thought they had a "lead-pipe cinch" on their business, and who found very shortly after they applied the new methods where they were losing thousands upon thousands of dollars a year.

There was the manager who was striving for two hundred thousand dollar sales where he had one hundred and seventy-five thousand the year before and who found, after putting in a cost finding system, that his sales dropped off so that he did not reach even one hundred and thirty thousand, but who for the first time in all his business life had real, live profits.

The writer has come in contact with nearly every class of business man, nearly every kind of disposition toward cost finding and analysis and with all sorts of business conditions. The problems have been "tackled" and solved by getting all to faithfully follow a few natural business laws.

If the printer—and it is to the printer that all credit must be given for the discovery of the new science—can solve his cost problems, the launderer, the metal and woodworker, the wagon and harness maker, the cloth worker, the remedy and extract maker, the spice grinder, soap maker, the painter, paper hanger and decorator, the banker and many others, can *all* have the cost of their business and various products successfully found and analyzed *by the same methods*—the same system—then surely the brick and tile maker, the sewer pipe maker and the potter, in fact anyone working in clay, can have the cost of his product found and analyzed, even if he makes five hundred different kinds of commodities. This can be done with less red-tape and greater ease than he imagines, because he is now in the dark so far as the science of cost finding and analysis is concerned.

A few of the points to which it is desired to call your attention and with which to study with you in future articles are, first, that any percentage method of cost finding is dead wrong, and second, we will take up the real fundamentals of this new science and show where it can be applied in the manufacture of any of the various clay products.

Many say, from the standpoint of the employe, that because the points referred to above have been overlooked is why the "capitalist" is soulless. Others say, from the standpoint of the employer, that the employe is the soulless one; while from the standpoint of the consumer it is said that both the employer and employe are without a soul.

One day, a Southern planter happened to be far out in an unfrequented part of his wooden possessions. Coming from the neighborhood of a brook and in the thickest but most inspiring part of the woods, he heard the sweetest of guitar music. Carefully picking his way, he came on one of his old darkies playing away in perfect rapture.

"What, for th' Lawd sakes you all doin' 'way out here, Sambo? Way out here makin' that sweet music?"

"Well, sah, Ah'll tell you—Ah'se come way out here where all am right an' quiet, an' where Ah' can serenade mah soul!"

Yes, there may be more truth than poetry in the claims that there is much soullessness in business today. But come, friends, let the clayworkers, let every business man—and with him his employe—serenade his soul in the light of cost knowledge.

For men are longing for a little more soul in things—and let us help them get it by living and working and doing business in the cost light which will give it a new soul.

In the January 19 Issue—

Mr. Sheasgreen will give some of the basic principles upon which the "New Gospel" of Cost Finding is founded.

Boiler Room Economy

A Brief Article That Points a Way to Saving Money Which Daily "Goes Up in Smoke"

By C. O. Arbogust, Cr. E.

IN these days of keen competition among the clay product plants, a big effort has been made towards cost reduction.

The demands for quality by the architect and builder had to be satisfied, and to obtain this quality, two paths were open to get the money that was necessary to expend in improvements in order to obtain the much desired "better ware."

One way was very obvious—to raise the price per thousand—and in some instances this was done, but the total lack of a spirit of co-operation, and anti-trust agitation, caused this, the easiest way, to gain but scant headway.

Only one other method remained that was feasible: It was to reduce manufacturing costs through the medium of labor saving machinery, and the adoption of scientific management in both office and factory.

In this direction big strides have been made. Clayworkers have eagerly examined and installed new devices that tend towards a real cash saving, but for some unexplained reason, their efforts have been confined to the factory proper and the power plant has been neglected.

We have far too long considered the power plant, including the boiler room, *as a necessary evil.* At this point a large per cent of the annual manufacturing cost is created, and the charge is both high and unwarranted, for in no other department, with the burning excepted, are the possibilities for a substantial reduction in costs so potential.

To visit and examine thoroughly some of our power installations, is to be impressed with the idea that an effort has *not* been made to obtain the highest degree of economy, but rather the place appears to be stripped, and that the general scheme has been to do without all auxiliary devices and use only those actually necessary for steaming purposes.

On some plants, not all, but on at least enough to give just cause for complaint, are found installations wofully inadequate to produce steam with a maximum efficiency of men and fuel. Feed water heaters and purifiers, oil filters and separators and other similar economical devices are not in evidence. This lack would be excusable if such equipment could not be secured, or if after being installed, it had a doubtful economical value.

Perhaps ninety per cent of our boilers are defective and do not begin to give their rated efficiency, because of a neglect to see that the setting is perfect, that flues are clean, that scale formation is regularly removed, that holes through walls, breeching and stack are properly sealed. All of the above increase the amount of fuel used, and lower the efficiency of the steaming plant, yet all together, they do not cause the loss that is occasioned by the selection and use of improperly designed grates.

Coal cost is the most important item entering into manufacturing cost, and as a matter of fact this particular item, with reference to boiler room coal, has received almost no attention heretofore. I would say that seventy-five per cent of the furnaces under the boiler are still equipped with the old style stationary grate bar that has been discarded for years by progressive industries. (I may add that it is also true to an even greater degree in the kiln furnace.)

In firing over a stationary horizontal grate the fireman needs constantly to use a slash bar; to do so means that every ten or fifteen minutes the furnace doors are open, cold air rushes in and the heat is moderated in proportion to amount of air admitted; the fuel bed is disturbed, it burns out quickly, and delivers a volume of volatile gas that is impossible to consume, this gas going out the stack as wasted units. The recurring expansion and contraction will in time injure the boiler, causing leaks. Then in addition it is an impossibility to thoroughly clean the grates of the accumulation of fine ash and clinker so that uniform combustion can take place over the efitire grate surface. No better *expression of inefficiency* could be given.

Substantially all of the above waste can be eliminated by installing sets of any good make of rocking and shaking grates, and by so doing it is possible to operate a boiler or boilers, not only up to and above their normal rating, which is sure economy, but it is also possible to burn the cheapest grades of coal such as slack and screenings, securing just as much steam from these cheaper grades of coal as was formerly secured from higher priced coal used on stationary horizontal grates. This in itself will make a handsome saving during the year.

It is not necessary to go to extremes and equip with all the accessories of a large central plant but it is a duty to procure those devices that so greatly reduce cost and increase efficiency with a relatively small first cost.

The feed water line to boiler should run first to a heater and purifier, all steam pipes being thoroughly covered; the very best grade of cylinder oil should be used; it should not be permitted to enter boiler; all joints should be packed with a good grade of packing; the flues should be kept scraped and clean both inside and out (this often requires the use of a selected boiler compound); the coal bunkers should be as close as possible to fire doors of furnace, and finally a grate should be selected that will show economy in every phase of its use. It must deliver constant heat without consuming great quantities of coal and must be easily and cheaply cleaned. A shaking grate is the only solution for the medium sized plants.

It is true that the averaged boiler will show an *increase* in the *efficiency* curve and a *decrease* in the *cost* curve, if it is equipped with the proper grates and other economical devices. But it must be remembered that the actual care of the boiler is just as important. Insist that scale be removed and boiler thoroughly washed at frequent intervals, see that flues are clean, and that there is no leakage of cold air as outlined above.

Devices designed to secure economy, coupled with intelligent operation will bring results nothing less than startling, the attainment of which should not be neglected.

Reaching the Farmer

The Third of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER VII.

Getting Bigger Sales from Direct Distribution.

THE man who sits and waits for business to come to him is digging his own financial grave. Immediately, you will deny your guilt, but the fact is that there are hundreds of clay products manufacturers who actually wait until excessive rain drives the farmer into their office for a carload or two of drain tile, or procrastinate over the woes of small demand and still smaller profits while the cement and sheet metal men are *busy* telling the farmer *how* he can increase his efficiency and save money by using their products.

It is so, I have had several manufacturers tell me that their first experience in making clay products for use on the farm—other than drain tile—was to supply *a demand* on the part of a neighboring farmer for blocks with which to build a silo. The silo, when built, made such a favorable impression upon the other farmers in the locality that they also wanted one. The result was that the manufacturer did a thriving silo block business for a short time. *A new market was opened* to the manufacturer by the farmer recognizing the *merit of clay products and coming to the manufacturer and asking him to supply his needs.*

It is with a great deal of satisfaction that we see the superiority of burned clay assert itself, but what has the manufacturer done since he supplied the first farmer with a burned clay silo, to convince the farmers in the neighboring counties—those who are at a distance from his plant—that their silos should also be constructed of burned clay? Has he seized upon the golden opportunity offered in newly created interest in his product *right in his own locality* to demonstrate its utility in the construction of farmsteads, barns, hog houses, chicken houses, cisterns, cellars and a host of other small farm buildings? In most instances, he has followed the line of least resistance. He has been content to rely on word-of-mouth recommendation from satisfied customers and personal calls on his part when he could get away from the plant and when such trips were not too expensive, to increase the use of his product.

The best and most economical way to create interest and obtain new prospects is through advertising. Some manufacturers have tried mailing literature—where they were fortunate enough to have it—to a list of prospective farmer customers. This, in most cases, however, has proved unsatisfactory because of the difficulty in securing a good list of live prospects, the "dead" names resulting in a great waste of printed matter and postage.

The farm papers are by far the best medium with which to reach the farmer. To them he looks for advice on all his problems—cultivation, buildings, stock and home. There is no denying, however, that the cost of a two-inch advertisement, column width, in a farm journal looks rather high to the average manufacturer. The fact that such advertising is expensive brings home to the maker of burned clay who has never used the farm journals, the advisability of consulting someone experienced in this class of advertising before using this means of securing new customers.

Because of the many points involved—the appropriation, the necessity of good "copy" and the choosing of the best farm journal to most effectively and efficiently present our message to the farmer in each particular case—and because we shall want to introduce, for the encouragement of the faint-hearted, some facts—some convincing proof—of what publicity will do for clay products on the farm, we shall leave the more technical discussion of this subject to succeeding articles. At that time, agricultural clay products will be divided into three groups and the advertising of each particular group thoroughly discussed.

Therefore, let us assume that you already have the name or names of several prospects, without regard to source. You know that so-and-so in such-and-such a town is interested in drain tile and that another farmer not so very far away, is about to build a new chicken house and is interested in materials for its construction. *What can you do through the mail to sell these prospects?*

It is here that we shall turn to the discussion of a few shortcomings in the industry, the remedying of which is badly needed, even before we start advertising.

CHAPTER VIII.

Tell the Farmer How to Use Your Product.

The average man, and the farmer is no exception, likes to look at pictures. When the subjects of these pictures are of vital interest to him—subjects which surround him in his daily tasks—and are accompanied by descriptive matter, their attractiveness for him is greatly increased.
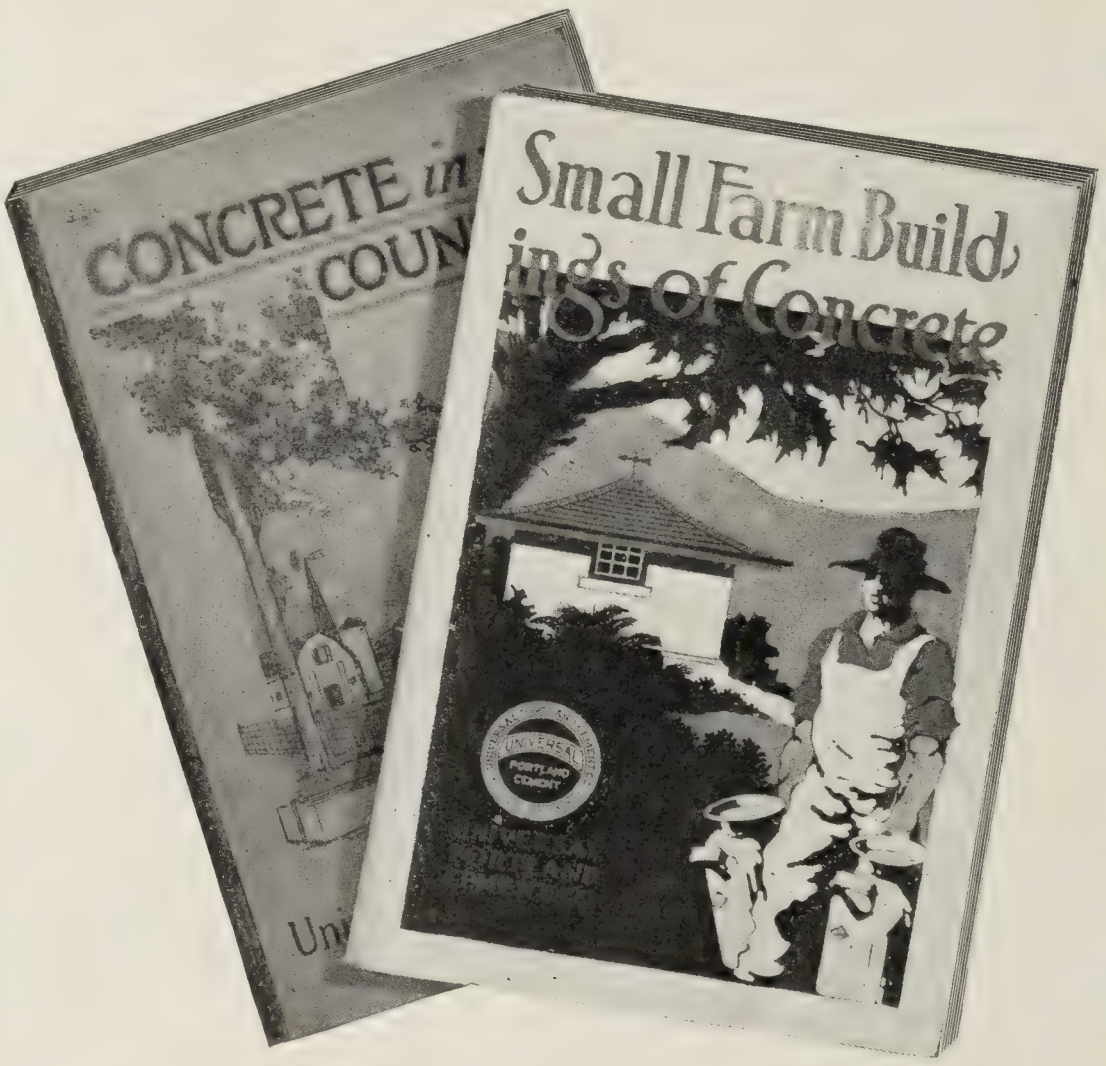
That the cement interests have taken advantage of these facts is shown in the accompanying illustration of two booklets which have been issued by a large cement company. These booklets contain nearly one hundred and fifty pages of pictures and deail drawings showing just how farm buildings may be constructed of concrete and how similar buildings built by other farmers look when they are finished. When the farmer receives a booklet of this sort and looks at the pictures and reads the description that accompanies them, he is greatly impressed with the advantages of concrete. It does not then take very much to convince him that he should use concrete and the chances are that the next time he goes to town, he inquires of the local cement dealer about the price of cement. If he does not buy at that time, he probably will in the near future. *What chance has the clay man with his makeshift selling methods and poor literature, to convince this farmer that he should use clay products, when he has already been won over by the cement man who has taken the trouble to educate him in the use of his material?*

For every manufacturer of burned clay who finds a market for his ware on the farm, and especially the clayworker who sells direct to the customer, such a booklet or booklets, showing the farmer how to use burned clay for drainage,

silos and farm buildings would prove an invaluable sales help. With few—pitiably few—exceptions, the clay man has produced no such literature.

It is true that the making of a booklet such as has been described involves the expenditure of a great deal of mental and physical energy, besides the cost of printing. Good pictures showing clay products in various capacities about the farm are not always easily obtainable, from the writer's own experience. It is here that a central bureau of information, for instance in each state—of which each manufacturer in that state should be a member—whose duty it would be to collect data and information regarding clay products, would fill the gap. It would not be a difficult task for such a bureau to get out at least one booklet dealing in general with clay products on the farm, and several smaller booklets showing the advantages and use of burned clay drain tile, silo blocks, farm houses, barns and other small farm buildings. There would be but one initial editorial expense for each booklet for all of the bureau members. This literature could be printed in large quantities and sold to the members at a very low cost.

It is hoped that this long-felt want—the need of more and better burned clay literature—may be filled in the near future by a bureau such as has been suggested or by some organization or organizations interested in the welfare of clay products on the farm. *Something is badly needed to offset the influence of the avalanche of booklets and pamphlets which are daily urging the farmer to use competitive materials.*



The "Silent Salesmen" of the Cement Man.

The letters are well written, their purpose being to secure the confidence of the farmer in them and the materials they are selling. He is pleased with their tone—one not overfamiliar—which makes him feel as though he is the biggest customer they have ever had for their silos. They have won his friendship and he is more than willing to listen to their further claims.

Finally comes a reply from the clay man. It is nothing more than an acknowledgment of the farmer's letter and quotes prices on blocks. A feeble effort may have been made to talk quality by referring to the number of years said clay man has been in business, but, in most cases, nothing more. The farmer looks at the reply for a moment or two and then remarks, "By gum, them fellows don't want *my* business."

The illustration used may be a trifle overdrawn, but it contains some salient points that call for deep thought. Upon your very first letter often depends the growth of further interest on the part of the farmer. An unbusinesslike letter, or one untactfully written can very easily shut the door to any further solicitation on your part for your product.

The average clay products manufacturer cannot write a good sales letter. There are exceptions, of course, but in the main this is true. Men who have devoted many years to the study of selling problems in other industries have recognized this fault in their respective lines. The result has been a library of books which attempt to throw some light on methods to be pursued in writing "snappy" sales letters. Great improvement may be had from the perusual of authoritative literature on this subject.

CHAPTER IX.

Writing Good Sales Letters.

But even let us assume that you have first-class literature to send to the farmer. With it must go letters persuading him to buy—for the manufacturer who sells direct to the customer at a distance from the plant, sells most of his goods by mail.

To get a vivid picture of the part played by a good letter in selling to the farmer, let us imagine we are in the sitting room of a typical farmhouse which is to be found anywhere. The farmer is about to build a silo and his attention has been called to burned clay, concrete, wood and possibly metal as being suitable materials. He is sitting at the table laboriously engaged in writing four letters, one to each of four concerns making the materials above mentioned. We see him post them that afternoon when he goes to town.

Almost by return mail, or very nearly so, come three letters from the cement man, the lumberman and the steelman, and three envelopes containing their literature on silos.

A few concerns have sprung into existence which make it a business of "digging up" new sales arguments, new thoughts which may be injected into daily correspondence. These thoughts are gathered together and issued, in some cases, every week in bulletin form to firms who subscribe for this service. The purpose of these bulletins is to put "ginger" into the correspondence of the subscriber's sales department.

The difficulty with the sales-letter helps which have been enumerated, are that they are too general. They are calculated to sell anything from a monkey wrench to a grand piano. *What a benefaction it would be to the industry if some literature, a bulletin service or some other helpful information could be had that would deal exclusively with the writing of good sales letters in the marketing of clay products.*

Space will not permit, nor is it the intention of this

article to set forth a model system of letter writing in the selling of burned clay. Proficiency in that type of salesmanship can be obtained only through study and practice. Many of the stereotyped forms used in letter writing should be discarded. The more of the personal element that is injected into your correspondence with a customer, the better will be your chances of selling him. Make your letters talk. Write to your customer just as you would talk to him if he were standing before you.

The manufacturer whose face is turned toward bigger sales, and particularly he who follows the direct method of distribution, will do well to look to the improvement of his literature and sales letters. He will be more than compensated for the time and money invested in that direction, by a higher percentage in sales.

How can the clayworker, whose literature is limited to a few small pamphlets and whose style of letter writing is not above that of the average school boy, hope to successfully compete with the cement, lumber or metal man, whose comprehensive, illuminating booklets and whose skillfully written, sales-producing letters are convincing the farmer that their material is what he wants.

Do not these facts call for some serious consideration and the assumption of an open-minded attitude that will make for improvement in our methods of securing the business of our prospective farmer customer?

In the next article we shall discuss the problems in getting dealer co-operation and shall try to offer some suggestions that will show how this method of distribution may be improved.

Putting Patriotism Into Brickwork

One of these days some enterprising brickmaker will order a roller or a die that will imprint an entirely new slogan on his brick. When he does that, and his brick are shipped far and wide, and built into a thousand walls, he will have the satisfaction of knowing that every time a bricklayer spreads a trowel of mortar upon the bed, he does it with a smile—a friendly, brotherly smile for the brickmaker who had enough sunlight in his makeup to stamp his brick with a nation's slogan.

The slogan will be simple—but it will tell a long story of the brickmaker's pride—pride in his product, his home and in his country. Can you imagine what the slogan will be?

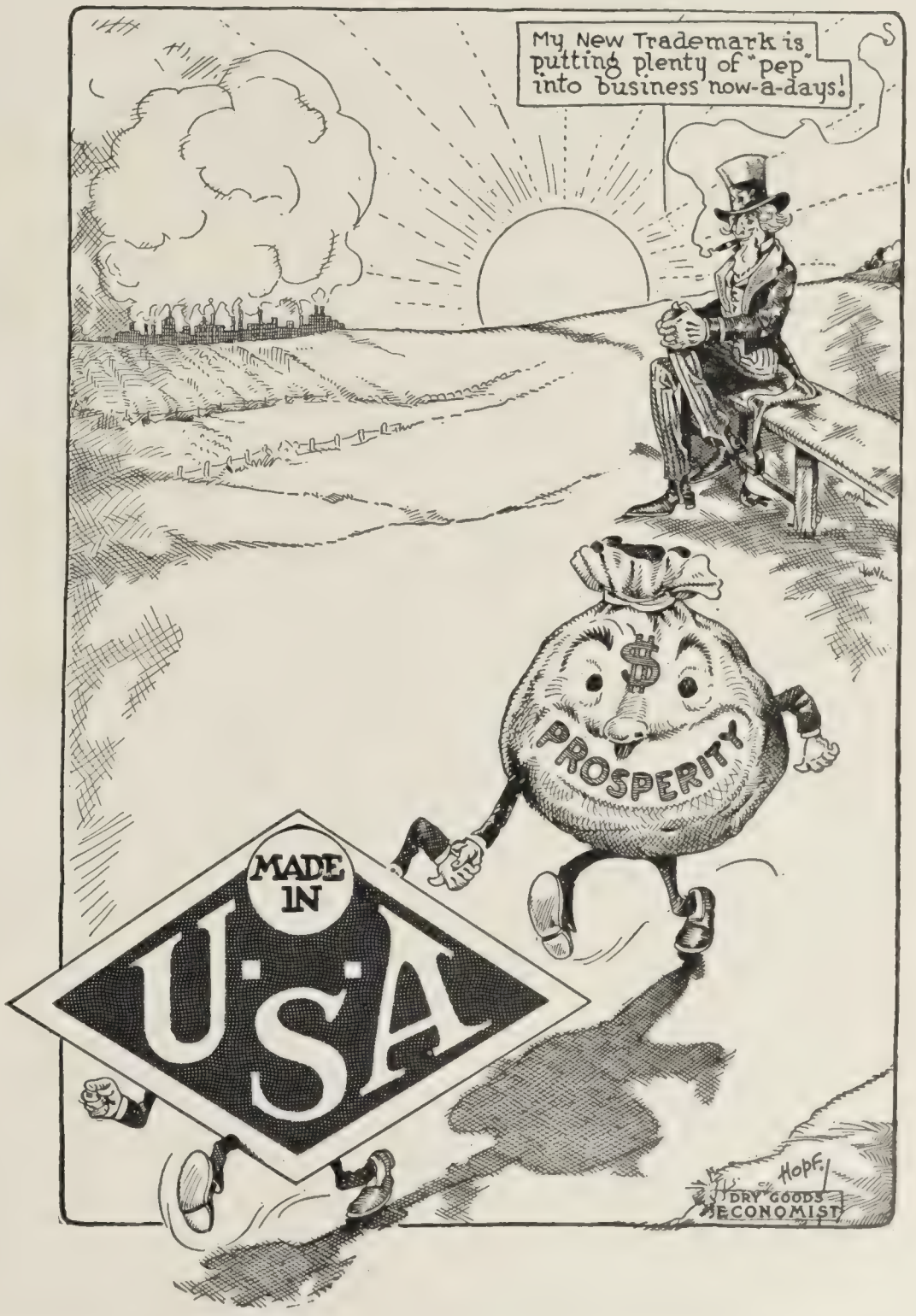
Fortunately the American builder has been a little more sensible in his selection of brick than he used to be when he picked out other, and, at that time, more "artistic" materials.

Then the magical word "imported" meant something. Today, at least so far as brick and tile are concerned, it brings no message of superiority.

Indeed, "Made in U. S. A." means, as a rule, just a little better material and workmanship than would be found in an article that could not truthfully be so branded.

It may be that the suggestion outlined above will bring another sort of smile—a pitying one—that any one should suggest so silly a notion. It is obvious, you say, that a brick used in this country must be "Made in U. S. A." Yet, if you will think back but a few years you will remember when they imported enameled brick from England because, it was said, that American-made enameled brick were inferior.

Today, a very appreciable quantity of tile is being imported—or rather was before the European war—yet, it is a very grave question as to whether these foreign made tile are one whit better than those "Made in U. S. A."



Aside from any question of tariff whereby the consumer pays a tax upon what seems poor judgment there is an added point of excess freight and, away beyond this, the distance of the producing point from the place where consumption begins. Here, in America, it is comparatively easy for a man using the material to "take a run over to the factory" and see his material being made. He cannot very well go to Europe and do the same thing.

Clay Storage

A Simple, Inexpensive Method of Preparing, Storing and Weathering Shale and Fire Clay

By H. P. Robbins

UNSATISFACTORY results in the finished product, making all efforts spent in previous operations a dead loss, combined with an annual loss of many days' time have proven conclusively that more attention must be paid to the weathering and storing of clay and shale.

There are two fundamental reasons why the raw material should be boarded in large quantities.

1. Weathering, or the changing of the physical properties of the material by natural means to promote working qualities.

2. Storage, to provide against manufacturing delays, caused by inclement weather, breaks in equipment and other causes.

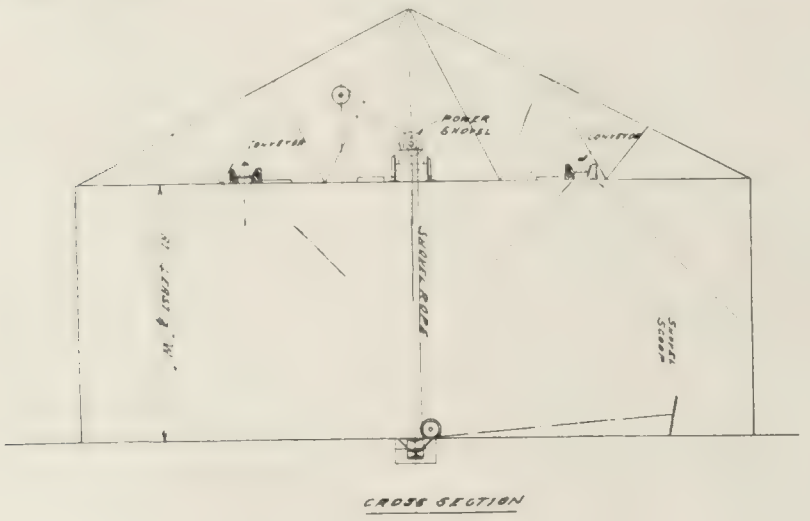


Fig. 1.

There are practically no plants manufacturing clay products that do not need a storage system, this need to be classified under one or both of the above divisions.

Many manufacturers fully realize the value of these features, but due to the lack of some simple and efficient method of attaining this result, they have preferred to take chances of their ware coming out satisfactorily and steadily, and have not put in some of the costly though efficient systems that have been developed from time to time.

A system which cannot possibly be surpassed for reasonableness of first cost, of installation, flexibility and capacity, is shown in Fig. 1.

This system consists of any approved or usual method of bringing the clay in from the mine or pit. For convenience in handling it is preferable to run the clay through some type of rolls or disintegrators, according to the nature of the material, breaking down all pieces so that they will not exceed from two to three-inch cubes or smaller.

There is a two-fold reason in this primary crushing; one is for convenience in the handling system, but the greatest and most important is the breaking up of the material so as to give the air a better chance to get at all of the particles, and benefit every bit possible.

The rolls or disintegrator would deliver directly into a simple elevator of the self-contained inclined type, as illustrated in Fig. 2. The elevator in turn would deliver into the distributing conveyor.

This conveyor is of a rather unusual though thoroughly reliable and efficient type, consisting of a single strand of heavy steel chain running on its side, instead of either top or bottom, as is usual in conveyors of this type. All sprockets are set in a horizontal plane with the shafts vertical and the conveyor is such that it may be operated in either direction.

The conveyor is made up of single strand chain, to which wood or steel flights are attached, these flights fitted with either wearing shoes or suitable small rollers, according to conditions, the device forming what is known as a "drag conveyor," scraping the material along a steel trough fitted with proper discharge gates at desired points.

The material is discharged at one point into the distributing conveyor, and then carried either to the right or to the left as desired and distributed by means of properly located gates. In the longitudinal run the clay may be discharged wherever desired, and if desirable to bed or distribute the material in an even form, the operator may open and close the gates alternately, or in any rotation desired.

For instance, the material might be discharged through gate No. 1 for 5, 10, 15 or 30 minutes, as desired, and then through gate No. 2 for a like period of time, and so on, distributing a certain amount of material each day.

By providing a storage of sufficient capacity to carry from one to two or more weeks or more supply of material on each side, these beds may be worked alternately.

For taking the material out of storage a power shovel of the type illustrated in Fig. 3 can be used. This may be mounted on a track directly above the center of the storage system and may be driven by means of a line shaft running longitudinally, fitted with suitable drive pulleys at desired points, or by means of an electric motor with suitable plugs for connection.

Running longitudinally under the storage bins is a reclaiming conveyor of any suitable type, either a simple

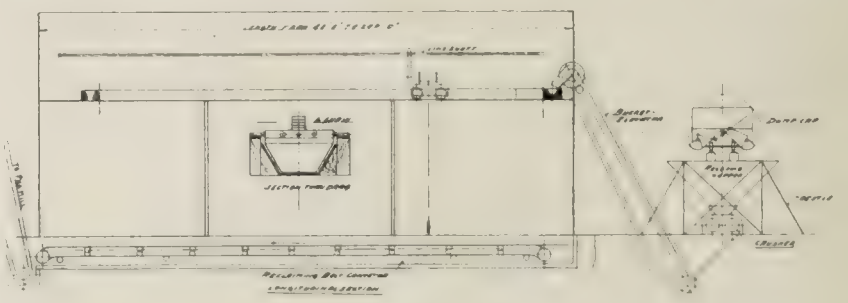


Fig. 2.

drag pan conveyor or a belt conveyor can be used. Whichever type of conveyor is chosen it will probably be found desirable to keep it covered by means of loose removable boards, and it also may be desirable to have some

simple type of hopper for feeding the material directly into the conveyor without spilling. This hopper could

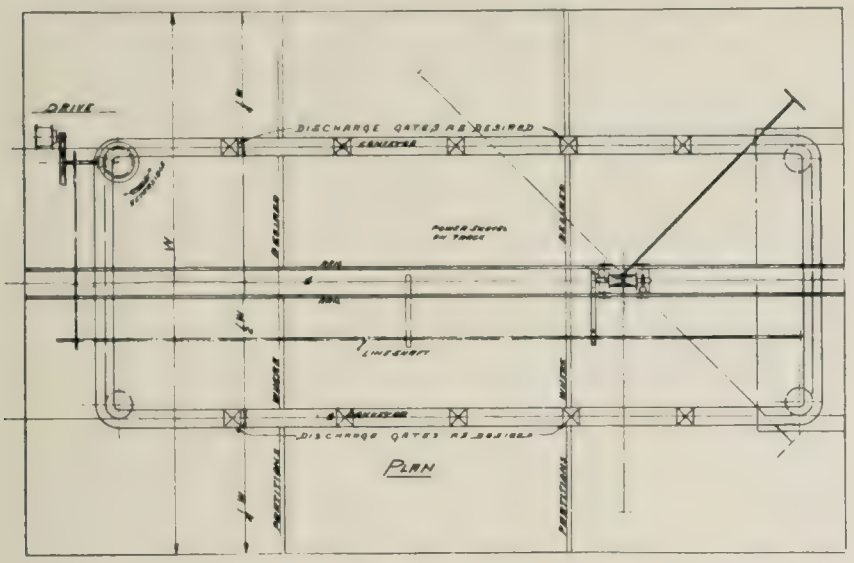


Fig. 3.

easily be mounted on the frame carrying the conveyor and by means of a cable it could be moved from or to any desired point.

With this apparatus one man can deliver to the conveyor from 15 to 30 tons of material an hour without any great exertion, and with the material bedded and weathered, and of an even mix.

As to the size of the storage, height, etc., it will be noted that no set dimensions are given, and this would depend entirely upon local conditions. There is no reason why this outfit will not be thoroughly practical for a system up to 200 feet in length and from 40 feet to 60 feet in width, with the height according to desired capacity. However, this system would be just as efficient on a storage of from 40 feet to 80 feet in length, and with a width from 15 feet to 25 feet.

Of course in the smaller systems there would be no necessity for the use of the power shovel as a man with a hoe or suitable implement could feed the conveyor to the required capacity.

While it is possible and sometimes very desirable to put in some more expensive and larger capacity storage systems, it will be found that this system will be applicable to practically any plant, and gives to the clay worker an opportunity of working out his storage and weathering problems in an extremely cheap and yet practical manner.

New Jersey Clayworkers' Convention Largely Attended

The annual winter meeting of the New Jersey Clayworkers' Association was held at Rutgers College, New Brunswick, N. J., on December 28th and 29th with a very good attendance, an exceptionally large number of clayworkers from Trenton and Perth Amboy being present.

The convention was opened on the morning of Monday, the 28th, by an address of welcome by Mayor Austin Scott of New Brunswick. This was followed by an address on the part of the president of the association, C. A. Bloomfield. The following papers were then read:

"The Burning of Whiteware and Porcelain," by George H. Brown of the United States Bureau of Standards.

"The Control and Pottery and Brick Kilns," by Marc Solon of the Mercer Pottery Company, Trenton, N. J.

"The Preparation of a Body for Sanitary Ware," by Otis O. Bowman of Trenton.

After lunch, the business session of the association was held, which was followed by other interesting papers, as follows:

"The Importance of the Sagger Department," by George Simcoe of the Electric Porcelain and Manufacturing Company, Trenton.

"Some Notes on the Effect of Alkalies, Acids and Salts on Clays and Clay Bodies," by A. V. Bleininger of the United States Bureau of Standards.

"Some Improvements in Clayworking Machinery," by D. M. Miller of the Crossley Machine Company, of Trenton.

The feature of the closing day was an address by Prof. C. W. Parmalee on "The Use of the Local Red Shale for Vitrified Wares." Besides Professor Parmalee's talk, the following addresses were given at the morning session:

"The Burning of Face Brick," by D. H. Applegate, Jr., of the Crescent Brick Company, of Red Bank.

"The Use of Accurate Records in the Selection and Purchase of Fuel," by Carlton W. Hubbard, of the Fuel Engineering Company, of New York City.

"The Preparation of Plaster Molds," by George A. Williams, of New York City.

These addresses featured this afternoon's session:

"The Load Test of Clay Refractories," by A. V. Bleininger, of the U. S. Bureau of Standards.

"Refractories, Their Relation to Industrial Progress," by George A. Balz, of the Didier-March Company, of Perth Amboy.

"Some Hydro-Metallurgical Apparatus and Its Possible Application to the Clay Industry," by J. V. N. Door, of New York City.

Ohio Communities Heartily in Favor of Brick.

Popular appreciation of the high qualities of brick as a paving material has been shown recently in two instances in Ohio.

At Portsmouth, a meeting held by the local good roads association, at which the county commissioners and a representative of the state highway department were present, resulted in an expression of opinion on the subject of material which indicates that the people are very much in favor of brick as against concrete. The object of the meeting, in fact, was to discover whether a contract already let for three and one-half miles of pike, in which concrete was specified as the material, could be rescinded in favor of brick. The representative of the state highway department pointed out that if action along this line were taken, it might result in the county's losing $40,000 contributed to the road by the state, and that, moreover, a brick road would cost more. This naturally complicated matters, but action was taken looking toward the adoption of some course which would permit brick to be used without losing state aid.

Incidentally, one of the local papers took occasion to express its opinion, in an editorial headed "Just One Kind," in which it went on to say that brick is the only form of permanent highway construction. As the editor pointed out, "Brick costs more, and it is right it should, since it is superior. It is the only construction, not prohibitive in price, that will survive until the bonds, issued to pay for it, become due. It will outrun a ten-year bond ten times and then be practically as new as when first laid." This indicates a favorable public attitude toward brick.

Another instance of this sort occurred at Canton, where a petition signed by two hundred property-owners requested the city council to use brick instead of asphalt.

Questions and Answers

Here Are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants to Increase Dryer Capacity.

604. *North Carolina—Our material is a disintegrated shale which carries sufficient moisture to mold into brick without adding pugging water. Our machinery equipment consists of an ordinary disintegrator, a pugmill, and an auger brick machine with end cutter. We have no trouble whatever in getting our material through the machines and molded into brick. It is after this part of the process of manufacture that our troubles begin. We have a six tunnel metallic radiation dryer, each tunnel being one hundred feet long and holding fourteen cars or about seven thousand brick. A vent in the receiving end of each tunnel opens into a stack fifty feet high. This dryer was guaranteed to give us 27,000 dry brick in twenty-four hours but in our brief experience with it, we have been able to dry only about one-half this number and then only by the use of considerable more coal at the dryer than we used at our burning kilns. If we rush the firing, the brick in the receiving end go into mud, on account of the excessive moisture. Making the vent into the stack larger has not prevented this. We find our dried brick are badly cracked and shelly. We think, however, that this is due to the fact that part of the material, as it enters the brick machine, is exceedingly fine and moist while the other part is much more coarse and much freer from moisture. It seems that the coarse material goes in the center while the finer, with its excessive moisture, forms a thin coating on the brick. This cracks wherever there is a particle of shale near the surface. Brick made of material which has been ground to a uniform fineness do not crack in this way. What can we do to increase the capacity of our dryer? What kind of a machine should we use for grinding our material? Our brick have excessive shrinkage. Is there some way of overcoming this? Would the addition of sand help, and what would be the effect in drying and burning?*

If the dryer which you are using was "guaranteed" to dry 27,000 brick each twenty-four hours, there must have been some preliminary calculation which, it is but fair to suppose, included the degree of heat that was to be maintained in the tunnels and the circulation of the superheated air. If a calculation of this kind was made, it must be in existence—either in your office or in the office of the company or individual that built your dryer. It would be well for you to secure these figures and then acquaint yourself with the facts as they exist. Is the heat that was calculated being maintained? Is the circulation that was calculated being maintained? We are of the opinion that your dryer trouble lies in lack of circulation. It must be remembered that the province of the dryer is to gradually raise the temperature of the ware which is being treated, to the boiling point and then dissipating the moisture as fast as it is brought to the surface. Too rapid drying means that the heat is applied so quickly as to dry the surface of the ware before the interior has reached a sufficient degree of heat to start the free moisture toward the surface. In this process, circulation plays as large a part as heat and if this circulation be neglected, disaster is sure to follow.

From your statement that you use "considerably more coal" at the dryer than you do at the kiln, we are led to suspect that you are running up your heat away beyond the point that is necessary for drying and, having saturated the air with the moisture driven off of the brick, your circulation is not sufficient to carry it away excepting in a form which is very similar to steam itself. This suspicion is made stronger by your statement "if we rush the fire the brick in the receiving end go into mud." The remedy would seem to lie in providing for a system of circulation that would be sufficient to carry off the superheated and saturated air, as it came from the drying ware, at a very much lower temperature than that at which has been carried, and by a series of experiments, finding how low a temperature you could safely use and, at the same time, insure perfect ware throughout the dryer. The question of "rushing" the drying would then come gradually and by a series of experiments that might be tedious. Eventually you would find the correct way of operating your dryer and the chances are, would be able to bring it up to its "guaranteed capacity" without checking or in any other way ruining your brick.

One of the questions that you ask seems to answer itself. You say "brick made of material ground to uniform fineness, do not crack." It should be a very simple matter to install a machine that would grind your clay uniformly or, failing in this, to provide screens that would allow only one fineness of clay to reach your pugmill and reject all the larger particles, throwing them back to the disintegrator. Back of this, and as a means of solving, perhaps, the greater part of your troubles, lies the suggestion that you provide for the the weathering of your clay. This would make the grinding easier and would, in all probability, do away with a great deal of the superfluous moisture. We suppose you will take exception to this word "superfluous" and you could rightly do so if you could be sure that your clay always contained the same amount of moisture. This, however, is manifestly impossible, since it must be gathered and in many cases used, after a rainy season. By storing it, under cover, and in a way that would allow it to be drained, it would seem as though it would come to your disintegrator in a much more uniform condition and this invariably makes for more uniform ware. It is impractical for us to suggest the kind of a machine that you should use for grinding your material. This is something that would depend so largely upon the condition of the material as to make any "long distance" suggestions the merest of mere guesses. This answers, in a way, about the addition of sand. A great deal depends upon the clay. The entire nature of this clay might be changed by intelligent weathering and we would suggest

your taking this matter up with some concern that makes a specialty of clay storage, conveying machinery and the like.

Economy of Various Grades of Coal.

603. *Montana—Figuring coal screenings worth $1.00 per ton, pea size at $2.00 and nut at $2.75, which grade is the cheapest to use in a scove kiln. Also how long should grates be and what style? What kind of coal do you recommend where a burner has the choice between a hot, flashy coal that has very little ash and a slower acting coal with considerable ash. Both coals burn without clinkering and the B. t. u.'s are about the same?*

The cost of fuel is determined by points other than the initial cost per ton. Time is a consideration, for it affects capacity and labor cost. The quality of the ware is also to be considered, since this affects the selling price. The coal that combines the small tonnage to mature the ware in the shortest time with the highest percentage of first quality ware is, as a rule, the cheapest, irrespective of its cost per ton. This statement is subject to some correction, since there might be so wide a difference between one initial cost and another as to off-set the saving in time, labor, repairs and spoiled ware. To secure a solution to your problem, it will be necessary for you to keep records—records that will show the length of time taken to complete each burn, the quality and quantity of material burned and the cost of the fuel. You are fortunately situated in this regard in that all of the coal mentioned by you has practically the same B. t. u. value. Generally speaking, hot flashy coal with little ash is preferable to the slower acting coal that has more ash, but this again depends upon local conditions. It may be a good plan to place peep holes through the side of the kiln wall, spacing them two feet apart from bottom to top. Through these the advance or the raising of the heat can be seen and records made that will have a bearing upon your final decision. A comparison of the data thus obtained should bring reliable information. It is impossible to answer your question regarding grates as the size and style depend upon the fuel you intend using. The dimensions also depend upon the construction of the kiln and the furnaces. Sometimes the coal burning furnaces are entirely away from the arch, in a side wall of the kiln and are, at times, placed in extensions built out from this wall. It is very difficult to give any positive answer to the problem as it has so many angles, anyone of which might off-set another.

Has Trouble Drying in Foggy Weather.

607. *Oregon—In the first place, I want to say that we are new in the brick and tile business, this being our first season. We have one down-draft kiln, in which we burn our tile and have had two very good burns and four very bad ones this summer. In this climate it is difficult to get tile or brick dry at this season as we have so much foggy and rainy weather. A great many of our tile are so damp that we can easily dig into them with our finger nails. Would you advise putting such tile in a kiln at all? We have been told that if we could get them dry enough to hold up their load and then watersmoke them slowly, they would be all right. Our last kiln was set with tile that were quite wet. We only fired day times and for seven days, keeping as slow a fire as we could. After that we fired hard for four days and three nights, but upon opening up this kiln we found the poorest lot yet. They were fairly hard but badly broken up and of a very poor color. Would it have been better if we had kept a fire nights as well as days while the watersmoking was on? And, to give a better color, should we have burned them longer? We could not make our fires much hotter as the fuel we use is fir wood. During the watersmoking period we left the fire doors wide open but when we commenced to burn hard, we closed them, leaving only enough draft to make a good fire. We hope that someone will answer our questions so that we will get started right.*

Acting on the assumption that you are drying your tile in racks in open air and that you have no means of drying them artificially, it is useless for us to point out any way in which you can improve the condition of the tile before they are set in the kiln.

Set your ware as near dry as your present facilities enable you to. When setting the kiln, leave trial holes in the setting, so that trial pieces, about four inches by four inches placed in these holes, can be withdrawn at will during drying and burning. These trials should have holes one inch in diameter so that they can be drawn out with a hook. The trial holes could run back into the kiln six to eight feet and should be placed on the floor of the kiln, then on top of the fourth and if possible, on top of the fifth course of tile. Then seal up the kiln and half of the furnace doors.

Start watersmoking with furnace doors open. Use a clean fire in every other furnace, generating as little smoke as possible after the fire is burning brightly. Secure a small bed of coals that has a flame not over eight or ten inches long; in fact, a flame is not necessary, a glowing hot bed of coals being the desired fire. Feed the fires lightly and often, putting on one stick of cord wood at each firing.

Keep working for a stack draft and get it as soon as possible. Build a fire in the bottom of the stack (if this can be done) and keep it going until the stack is pulling. During all of this process it will be remembered that only half of the furnaces are open.

At the end of twenty-four hours draw a trial from the top and if it shows that it is not drying continue the careful firing. Keep drawing trials at six hour intervals (or less) until the top shows improvement and when it does, open up the closed furnaces and fire them exactly as you have been firing the others.

Now transfer your attention to the drawing of trials from the bottom hole and continue the careful firing until the trials from the floor of the kiln show almost bone dry. When you are satisfied that the kiln is dry, build up your fires slowly and start burning. Do not close off your furnace doors entirely at any stage of the burning. Burn to the finish and draw trials during the burning the same as you have done during the watersmoking and in this way determine the hardness and the approaching maturity of the ware. By all means fire nights as well as days and do not allow the flow of slow heat to be interrupted. By following the above plan it should be possible to watersmoke in 3½ to 4 days and burn in from 2 to 3 days.

Wants to Glaze Under Side of Kiln Crown.

623. *Indiana—Please let us have your best method of glazing the under side of a kiln crown made of red brick. Ours is a round down-draft kiln and we burn at about 2,000 degrees Fah. at the crown.*

Make up a daub of fire clay and salt, the proportion being about one iron wheelbarrow load of the clay to one-half of one shovel full of salt. Mix with water to the consistency of paint and daub over the under side of the crown with a stiff broom. Try the above proportions first on a small patch, for if it contains too much salt it will blister during the glazing. If it does not glaze at all, double the quantity of salt which goes into the next batch and keep on adding at the rate of one-half a shovelful of salt to a wheelbarrow

load of clay, until the correct proportions are ascertained. It is impossible to give you a correct mixture, inasmuch as the alumina-iron content of the brick in the crown bears a definite ratio to the fluxing or melting point of the body silicate. The salt tends to reduce the fluxing point and the amount of salt added has, therefore, a definite work to do. Too much causes a pimpled, viscous structure and not enough causes no reaction and, therefore, no glazing.

The same glaze effect may be obtained by throwing four shovelfulls of salt in the furnace at two or three hour intervals during the last six or eight hours of burning. In addition to glazing the crown, this will also glaze the ware in the kiln, and if glazed ware is not desirable, the method first described should be adopted.

To Cure Blisters on Drain Tile.

606. *Illinois—We are having a great deal of trouble making our large size drain tile, especially the fifteen inch. They run fairly well at the machine and do not show up any great loss in drying. They seem to be in first-class condition when set in the kiln, but when we open the kiln sometimes half or more of our large tile are spoiled entirely. They seem to blister or blow out in patches of from four to sixteen inches in diameter. Sometimes we have very little loss and yet so far as we can see, our clay, machinery and general process of manufacture are identical with the conditions that existed before these losses began to occur. We have lately found that some of our tile when dry, show blisters which are about a half-inch high and possibly six inches in diameter. When we break these open we find the surface of the clay somewhat polished, just as if there had been laminations which were not knitted together. If you or any of your readers can given us any pointers, we will appreciate it, and if you want any more information we will be glad to give it to you or them.*

We are inclined to think that the difficulty lies either in unevenly ground clay or in unevenly tempered clay. Unless you have already taken every precaution to insure an unvarying supply of uniformly ground clay coming to the pug mill and there being mixed with an unvarying quantity of water, this is the most likely place to look for the solution of your blistering problem. If, on the other hand, you have taken every precaution along this line, and the trouble which you report, continues to exist, then there is a possibility that your clay is not sufficiently tempered or that it is forced into the auger or plunger in too dry a condition, and that lamination is set up by friction in passing through the die. This is a very common cause of "bubbles" or "shelling." The reason is obviously a differential flow of clay through the die under high pressure—not sufficient lubrication or too much friction. Also if the clay is not tempered thoroughly, it cannot knit together the smooth surfaces that are caused by the action of the auger, and these surfaces do not bond together sufficiently to resist dry shrinkage. It might be well also for you to look at your auger and see whether or not it is very much worn. A worn auger is a common cause of the difficulty which you have mentioned, although it is seldom given the proper consideration. Look into this part of your manufacture—from the point where you grind your clay to the point where the clay leaves the die and see if you cannot find a remedy there, before going any farther. Trouble may, of course, be in the dryer but we are inclined to think that it lies earlier in your process.

The Burning of Alkaline Clay.

622. *Montana—Is there a sure way of burning good brick from clay that contains alkali, potash, etc.? I mean, is there a way to get them hard and yet keep them from fusing together? Is it true that a kiln can be handled so that the alkaline salts will be dissipated before settling takes place and so be absent at that part of the burning period where they would, if present, act as a flux?*

This depends entirely on the percentage contained of each mineral mentioned. If it be excessive then we know of no way to accomplish the burning in safety. We do not believe that it is true that these salts can be so changed during any part of the water smoking or burning period that they would be rendered harmless. The only change that could take place, so far as we know, is that which would occur when they had attained sufficient heat to become chemically active, fluxing and fusing and attracting the surrounding silicates, but this change is the very one you wish to avoid. We would like to have more information on this point from our readers.

Coloring Molding Sand.

610. *Minnesota—There are brick yards in this vicinity turning out the same kind of brick that I am making but they use a certain coloring matter in the molding sand that gives all of their brick a dark red color. It will please me greatly if you can tell me what they use and how it is done. It is only the molding sand they color and it would aid me considerably if I knew what they used and how to use it.*

The material that you want for this purpose is ordinary red mortar color in dry powdered form. Slight experimenting will teach you how much to mix with your molding sand and in this connection, would say that only a small quantity is required. Regarding the best way of applying the molding sand mixed with the color, we refer you to the article published in the July 7, 1914, issue of "Brick and Clay Record" (page 58).

Burning in a Scove Kiln.

620. *Montana—In burning brick in a scove kiln is it good practice to have the kiln cool off between fires to allow the heat to rise or should the arches be kept at maximum heat, so they will stand until the top of the kiln shows nearly as hot as the lower courses?*

It certainly is not "good practice" to allow the lower arches to cool off between fires. It is considerably better to allow sufficient air to penetrate to the arches over the bed of kilns all during the fire, this air serving to prevent the melting of the lower brick in the arches and also to act as a carrying agent to lift the heat to the upper, unburned courses. It often happens that up-draft burners will close off one side of the kiln toward the finish of the burn and "mud-up" the furnaces, firing only one side for from four to six hours, the object being to reach, or burn the opposite head from the firing side. The operation is then reversed and this method lasts about twenty-four hours. It has one advantage in that it is economical in fuel.

It is the Desire—

of "Brick and Clay Record" to answer, by mail, every question asked this department. An attempt is made to forward these answers within a few days after the question is received. Sometimes investigations take a little longer, but we try to be as prompt as we wish others to be, when we are in trouble.

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Heat Required for Burning Clay Products

Ware	Common or Usual Temperature for Burning			High Temperature for Burning			Low Temperature for Burning		
	Fahr.	Cent.	Cone	Fahr.	Cent.	Cone.	Fahr.	Cent.	Cone.
Common red brick	1,814	990	08	1,886	1,030	06	1,742	950	010
Vitrified brick	2,354	1,290	8	2,426	1,330	10	2,246	1,230	5
Fire brick	2,426	1,330	10	2,714	1,490	18	2,354	1,290	8
Sewer pipe	2,354	1,290	8	2,462	1,350	11	2,102	1,150	1
Vitreous floor tile	2,426	1,330	10	2,498	1,370	12	2,354	1,290	8
Porous terra cotta	1,814	990	08	1,886	1,030	06	1,742	950	010
Tile—Salt glazed	2,354	1,290	8	2,462	1,350	11	2,102	1,150	1
Porcelain—Soft fire	2,282	1,250	6	2,354	1,290	8	2,210	1,210	4
Porcelain—Hard fire	2,426	1,330	10	2,498	1,370	12	2,354	1,290	8
Pottery—Biscuit	2,354	1,290	8	2,390	1,310	9	2,318	1,270	7
Pottery—Glost in United States	2,210	1,210	4	2,318	1,270	7	2,174	1,190	3
Pottery—Glost in England	1,850	1,010	07	1,886	1,030	06	1,814	990	08
Trenton glost kilns	2,282	1,250	6	2,354	1,290	8	2,282	1,250	6
Stoneware	2,354	1,290	8	.....	.....	..	.....	....	.

Method of Changing Thermometer Readings from Fahrenheit to Reaumer and Centigrade, and Vice Versa

Fahrenheit to Reaumer.—If above the freezing point.—Subtract 32 from the number of degrees; multiply the remainder by 4, and divide the product by 9.

Thus, $212° - 32° = 180°$, and $180° \times 4 \div 9 = 80°$.

If below the freezing point.—Add 32 to the number of degrees; multiply the remainder by 4, and divide the product by 9.

Thus, $40° + 32° = 72°$, and $72° \times 4 \div 9 = -32°$.

Reaumer to Fahrenheit.—Multiply the number of degrees by 9, and divide the product by 4. Then when they are above the freezing point, add 32 to the quotient, and when they are below, subtract 32.

Thus, $80° \times 9 \div 4 = 180$, and $180 + 32 = 212°$.

Thus, $-32° \times 9 \div 4 = 72$, and $72 - 32 = 40°$.

Fahrenheit to Centigrade.—If above the freezing point.—Subtract 32 from the number of degrees; multiply the remainder by 5, and divide the product by 9.

Thus, $212° - 32° \times 5 \div 9 = 180 \times 5 \div 9 = 100°$.

If below the freezing point.—Add 32 to the number of degrees; multiply the remainder by 5, and divide the product by 9.

Thus, $-40° + 32 \times 5 \div 9 = 72 \times 5 \div 9 = -40°$.

Centigrade to Fahrenheit.—Multiply the number of degrees by 9, and divide the product by 5. Then, when they are above the freezing point, add 32 to the quotient, and when they are below, subtract 32.

Thus, $100° \times 9 \div 5 = 180$, and $180 + 32 = 212°$.

Thus, $-10° \times 9 \div 5 = 18$, and $18 - 32 = 14°$.

Reaumer to Centigrade.—Multiply by .25 and add the product; or divide by 4 and add that product.

Thus, $80° \times .25 = 20$, and $20 + 80 = 100°$.

or $80° \div 4 = 20$, and $20 + 80 = 100°$.

Centigrade to Reaumer.—Divide by 5 and subtract the product.

Thus, $100° \div 5 = 20$, and $80 - 100 = 80°$.

Clean Up the Store Room.

We have all heard the old saying: "A place for everything and everything in its place," but how many can say they observe it?

We all admit that one of the most important things in operating a plant is to keep the machinery running. Yet in many plants it is a common occurrence for machines to be standing still and the crew idle, while someone is searching through a maze of junk for a duplicate part or a bolt to replace one which has been broken or is missing.

Then again, something is wanted, and after a futile hunt through the littered store room, another supply is ordered.

The next day you are looking for something else and instead of finding it you locate what you have ordered the previous day.

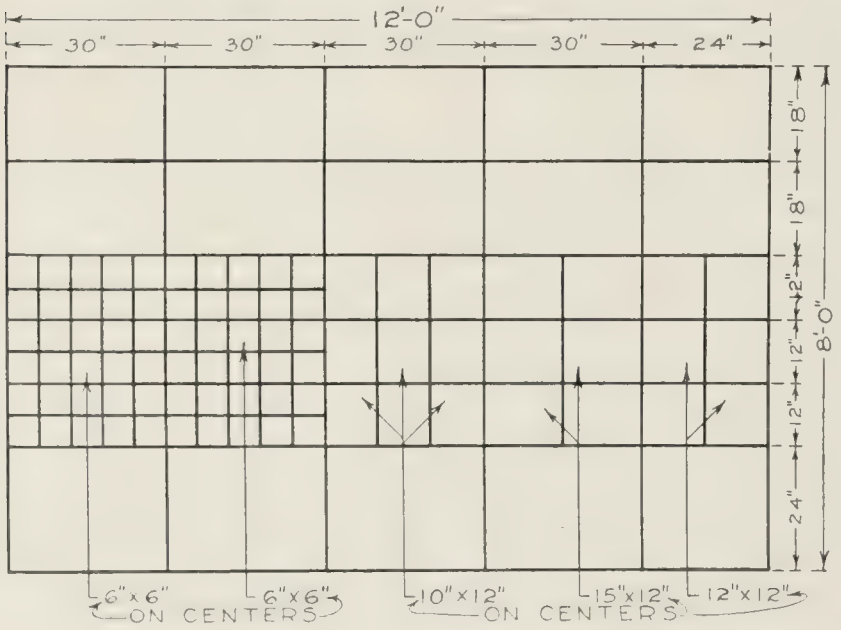
In the course of a year the loss of time, and extra expense of buying something you already have amounts to more than is realized.

As we are now approaching the season of the year in most clay plants when orders are not so plentiful and, conseqnently, there is more spare time, it would be a paying proposition to go through the store room, sort over everything and then put it where you can lay your hand on it when you need it.

To begin with, have the carpenter put up a row of pigeon holes and shelves, as shown in the accompanying diagram, if you do not already have such an arrangement. You will be surprised how much you can store away in a small space and be able to get it the second you need it. The number and sizes of the boxes will depend upon the size of the plant and the amount of material to be taken care of.

Take a small brush and with black paint mark on the front of each box what it contains. Then, instead of an old box filled with all sizes of bolts, nuts, spring washers, etc., both those in good and those in bad condition, you have each appliance where you can get it as needed without sorting over half of the box.

Lengths of pipe, iron rods and similar material can be conveniently reached if placed on brackets on the wall.



Roll up the separate bits of belting and put each width in a pile by itself.

Get repair parts that are similar together, and put them in separate piles. When everything of value is sorted out and taken care of, call in a junk dealer and sell him the rest.

The accompanying diagram represents the front view of the pigeon holes. The variety in sizes permits the storing of large or small articles with the smallest waste of space. The depth of the boxes depends on the amount of space at hand and the whim of the builder. Eighteen inches gives a very satisfactory shelf, although sizes down to twelve inches may be used.

A narrow strip is nailed along the bottom of each row of boxes to keep small articles from falling out. The main parts should be built of one-inch lumber, while three-eighths to one-half inch may be used for the small partitions. A smooth wall can be used for the back of the boxes.—C. A. Kruson.

A Very Successful Welding Compound.

The following compound is recommended by a writer in the "Scientific American" who has used it in the welding of various metals and has found it very successful:

Boric acid, 41 parts; common salt, 35 parts; ferro-cyanide of potassium, 20 parts; resin, 7 parts; carbonate of sodium, 3 parts.

The metal is first heated to a light red and the above mixture applied over the part that is to be welded. It is then heated to a yellow color and the welding is done in the usual manner.

Some Useful Pulley Information.

To determine the speed of a driven pulley, multiply the diameter of the driving pulley by the number of revolutions per minute it is making, and divide this result by the diameter of the driven pulley.

To determine the diameter of a driven pulley, required for a given speed, multiply the diameter of the driving pulley by the number of revolutions it is making and divide the result by the number of revolutions required for the driven pulley.

Length of Belt in a Roll.

When it is desired to know the approximate number of feet of belting in a roll without having to lay it out flat and measure it, the following method will be found useful. Add together the total diameter of the roll, in inches, and the diameter of the hole in the center of the roll, also in inches, and multiply the result by the number of coils in the roll. Then multiply by .131, which will give approximately the number of feet the roll contains. Full rolls of belting ordinarily contain from four hundred to five hundred feet.

Users of Storage Battery Locomotives.

"Brick and Clay Record" is collecting data and information on storage battery locomotives, and if you are using this type of traction power, you can help considerably in its perfection by taking the trouble to write us, stating what your experience has been and where you think this locomotive can be improved. This information is desired in connection with experiments which the Edison Storage Battery Company, of East Orange, N. J., are now conducting with a new steel-incased, non-acid storage battery. You can assist materially in the success of these experiments by letting us know what your experience has been with this type of locomotive.

Start A Scrap Book—

"Brick and Clay Record" publishes a host of valuable data for Superintendents of clayworking plants. If these are clipped and put in a scrap book, they will be ready for use at the time when they are most needed.

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Interested in "Publicity or Free Advertising".

Even though we have not received very many replies to our requests that subscribers who had used the advertisements and reading notices that were published in connection with Mr. Stoddard's articles on "Publicity or Free Advertising," we feel that they are doing some good. P. O. Duclos writes us from Bozeman, Mont., under date of Nov. 27th, as follows:

I came here about three weeks ago from Little Falls, Minn., and I am looking this location over for its possibilities in the clay products business. Since my arrival I have had considerable time to read and find myself greatly interested in the articles by R. P. Stoddard. As I have not copies previous to Oct. 20th, I wish to know how many articles in this series were published prior to that date and whether I can get them, also their cost. Bozeman is a city of 8,000 people, the metropolis of the famous Gallatin Valley, and no brick yard operating. The business part of the town is built of brick but the residence district is nearly all frame. I believe the time right to start advertising and I wish to get all the information I can this winter, so as to use it next season.

The series of articles on "Publicity or Free Advertising" by Ralph P. Stoddard, began in the Aug. 4th issue. We managed to scrape up enough extra copies to send one each to Mr. Duclos and trust that he will be able to make good use of them.

Says Brick Men Should Finance Young Builders.

R. Dabney Johnson, distributor of "Dabney" brick, in Galveston, Texas, writes a most interesting letter, giving some plans for furthering the sale of face-brick in Galveston, and suggesting a new way for brick men to extend the use of their material. Read what he writes, under date of Dec. 15:

Enclosed you will find a proof of a calendar with the "Build with Brick" slogan on it; in the top space will be placed a picture of a brick residence in color. In the lower space will be the calendar pad. During the next four or five weeks we will begin a "Build with Brick" advertising campaign in the street cars in Galveston and in the newspapers as well.

There is one question I would like to ask—that is, why the brick dealers do not follow the lead of the lumber men, in financing building operations? All through the South, lumber concerns are doing it, and in this way getting the small speculative builder firmly in their grasp. We have had several young builders ask this question—why don't the brick dealers do the same thing? If the brickmakers and brick dealers, all over the country, would, through their associations, inaugurate a fund that could be loaned out to users of brick, enabling them to buy brick on the "easy payment" plan that is so freely offered them by the lumber companies, it would not only earn a good rate of interest, but would promote the use of burned clay to an extent little dreamed of in the publicity campaigns that are now being suggested at conventions. And it would be a solar plexus blow to the lumber interests, who have been holding their large percentage of residence work largely through methods of this kind, which are accumulative in their results, adding a new "carpenter-builder" to their list of customers as fast as brick men "educate" an older builder and former customer of wood, away from frame to brick.

It is worthy of note that the writer of this letter, while Texan born, had his early training in the brick game with J. Parker B. Fiske, in New York. This may account, in some small way, for the sledge hammer blows he is aiming at the common enemy—frame. His idea is not as revolutionary as it seems. There should be as much money in brick as there is in lumber. If there were, it could be applied to just such work as the money of the lumber men is applied—and bring as big returns.

Says Toledo, Ohio, Has Plenty of Plants.

In a recent issue a letter was printed, in which the need of a hollow ware plant, in or near Toledo, Ohio, was set forth. In printing it, we imagined that some of the men interested in the clayworking business in that part of the Buckeye state would have something to say. We were not far from right. J. H. Wilson, manager of the Perrysburg Tile and Brick Company, of Perrysburg, Ohio, writes, under date of December 16:

In reply to the letter from O. A. Miltz, published in your Dec. 1 issue, would say that Toledo is a good city for brick and hollow ware, and there are only seventeen factories in and surrounding the city, that manufacture red clay brick and hollow ware. I am sure that there is room for one more, but I would advise Mr. Miltz to buy one of the several factories that are for sale, and get an established business, if possible.

If there are plants for sale, and the reason for selling is overproduction, we echo Mr. Wilson's advice—it is unwise to increase something that is, already, too big.

Takes Exception to Mr. Hutchinson's Article.

Since the publication of "Common vs. Uncommon Brick" which appeared in the Nov. 17 issue, several letters have been received, taking exception to some of the statements made therein. The most forcible of these is from R. Guastavino, president of the R. Guastavino Company, of New York and Boston, who writes, under date of Dec. 11:

We note with some surprise an article in your valued journal of November 17, written by Mr. G. A. Hutchinson, describing what is no doubt to him a new system of construction for arches, made up of thin brick or tile, which he states as being used extensively in Mexico, and in this method of construction, he recommends to the attention of those interested in brick architecture, apparently something new in this country.

I beg to state, for the information of your readers, that this type of arch was introduced in this country by my father as much as thirty years ago in New York city, in a

private residence of which he was the architect, and it has been used since that time in a great many prominent buildings in New York city and throughout the United States—with improvements, however, over the old methods, all of which are covered by patents, and these improvements make the construction fit modern American requirements.

This construction in small spans as described in this article was well known in Spain for a great many years, where it was used and developed by my father on a larger scale than by any other Spanish architect of his time.

While engaged in architectural study in Mexico about ten years ago, he introduced this system to architects there, to whom it had hitherto been practically unknown, except as some had seen it with very small spans in Spain, and under his direction many large arches were constructed in some Government buildings.

This type of construction in small spans between iron beams, as Mr. Hutchinson describes, is now rarely used in this country on account of the cost in competition with concrete slabs, but it is possible in Mexico on account of the high cost of Portland cement, which makes concrete construction expensive, while the low cost of mason labor favors tile arches.

The conditions are just the reverse in this country, where masons receive exceedingly higher wages, and Portland cement costs about one-half what it does in Mexico. However, competition with concrete becomes less as the span increases.

This type of vault is usually known to the building trade as the "Guastavino Arch," with which the leading architects in the United States are very familiar. As a local example, I would refer you to the vaulted tile ceilings and floors of the Chicago & Northwestern Railroad Terminal in your city.

We are glad to have this opportunity of publishing Mr. Guastavino's letter, and to thank him for taking the trouble to write it.

An Old Friend Has Something to Say.

Almost as long as clayworking has been talked of in clayworking magazines, the name of Doctor A. L. Converse of Springfield, Illinois, has been mentioned. During the past two or three years, perhaps, a little less was said than before, but now, possibly, to make up for this seeming lack of appreciation, his name comes once more into the limelight and will be kept in the steady glow for the next several weeks. Doctor Converse writes, under date of Dec. 10:

On account of my having been out of the brick business for more than two years, and having turned my subscription to "Brick and Clay Record" over to my successors, I have failed to see a brick journal in all that time. My mind has been so fully occupied trying to find out what the great European war is for, and who is likely to win, that I have neglected reading the journal which I so loved and studied some twenty years of my life. Not being especially interested in the clay industries has made no difference in my feeling toward so many of the tried and true friends who are continuing to manufacture the best building material on earth.

Mr. Huckins, secretary of the Illinois Clay Manufacturers' Association, was in Springfield a few days ago and informed me that the convention was coming to my city this year, a bit of information which made my heart glad.

He incidentally mentioned to me that arrangements had been made for me to act as toastmaster at the banquet which would be held on that occasion, a position which I reluctantly but finally accepted.

Springfield will be glad to have the convention and I, in particular, will be glad to meet my old friends of days agone and tell them a few stories in exchange for their "Munchausens," mine being like theirs gathered while mixing mud in the great state of Illinois.

My interests in the Springfield Paving Brick Company having fallen into better hands, I doubt not that members of the convention will find much of real interest in the plant with which I was connected for more than twenty years.

Very little can be added to the above. The Illinois clay manufacturers have always had a heavy attendance at their conventions. Whether this is due to the loyalty of the Illinois men or to the attractiveness of the program, is left to the imagination but the fact is that this year's convention (or rather that of 1915), promises to be a record breaker. Held at the New Leland Hotel at Springfield, it is housed in as fine a hostelry as will be found in any city outside of Chicago. It comes on days that do not conflict with any other convention except possibly that of the National Builders' Supply Association, and that is a dealer's proposition—not a manufacturers'.

Doctor Converse will doubtless look at a smiling sea of faces when he glances across the New Leland dining room into the eyes of the younger generation of Illinois clay manufacturers.

The Uppermost Thought of Clayworkers.

While it is not the province of this department to admit communications from readers who have something to sell (and by so doing, use it as a means of increasing sales) the following letter has so much good thought, that it is admitted. It is from J. E. Wiltshire, of Vigo, Ohio, who writes:

I have read with a great deal of interest, the "Question and Answer" pages of your magazine, and find some very important questions asked, and answered. It would seem that the uppermost thought in the mind of the clayworker is what his fellow craftsman is *doing,* not what he *thinks* he can do.

In the issue of December 1, I notice Mr. Goforth's question relative to producing good ware, of good color in the bottom courses of his kilns. I believe I can answer him, very briefly.

The first thing that is necessary is to remove the moisture from the ware that is set in the lower courses, so leaving them in a good, warm, dry condition to support the weight that rests upon them. This can be done by applying the first heat under the ware, saving time in the watersmoking and shortening the burning time, as applied to the whole kiln.

I know of cases where fifteen-inch drain tile, set right on the bottom of the kiln, and nested with smaller pieces, were successfully burned—the recorded waste of the kiln being exactly three pieces.

The secret lies in an even distribution of heat—a distribution that cannot be given by applying heat as it is done in the prevalent type of down-draft kilns, where the early heat is applied to the top courses and drawn down through underdried and cold ware, to and through a cold bottom.

During the past month or two, several short articles have been published in connection with burning systems that are based on this theory. What success have our readers had in this direction?

Offers Help to Iowa Manufacturers.

Homer F. Staley, of the Department of Geology and Mining Engineering, of the Iowa State College at Ames, Iowa, writes under date of December 23 as follows:

We note from time to time that you have inquiries from clay products manufacturers in Iowa in regard to manufacturing difficulties. In particular, in the last couple of issues you have had application for help from a manufacturer in the matter of cooling drain tile without air checking.

The Department of Ceramic Engineering, in conjunction with the ceramic engineer of the Engineering Experiment Station, is prepared to help the clay manufacturers of the State, in solving technical problems. This is done either by correspondence, or by making trips to the clay working plants when necessary. No charge is made for this work, except that for necessary traveling expenses.

We would be pleased to have you put us in touch with the manufacturer who is having trouble in cooling his pipe, and all other clay products manufacturers over the State of Iowa, who may make application to you from time to time.

In regard to the cooling of pipe in particular, I might

say that some of the clays of this State are very susceptible to air checking, and must have special treatment, as they cannot be cooled successfully by the methods in general use in the industry.

Owing to the fact that we have agreed not to give the names of any of our readers who send questions to the Q. & A. department, we have not forwarded the name of the manufacturer mentioned, to Prof. Staley, but, in a letter written some days ago, we called this manufacturer's attention to Prof. Staley's offer, and we trust that he will see his way clear to take advantage of this advice.

Wants a Good Mason Contractor.

H. M. Baldridge, of Illiopolis, Ill., has opened a line of thought which should be of value to many of our correspondents. Under date of December 28 he writes:

I have been reading Paul Belden's paper published by you in the December 15 issue of "Brick and Clay Record." The way he speaks of the contractors in small towns fits my case exactly, for the one that we have here seems to be partial to lumber. He says that a $2,500 house cannot be built of brick for $2,750, or anything like that sum. There is a house that is to be built in this town some time this spring, and I would like to get in touch with some one who can guarantee to take the plans for a $2,500 frame house, and build from them, making the outer walls of brick instead of frame, and not making the cost exceed $2,800 or $2,900. I hope that you will be able to find a contractor for me who is capable of doing this, and who will be willing to try it out in Illiopolis. Please hurry, as time may be precious.

If any of "Brick and Clay Record's" readers, whose offices or plants are located within a reasonable distance of Illiopolis, know of any good mason contractor, who is willing to open up what seems to be a new field for his line, it would be well for them to show him Mr. Baldridge's letter. If they cannot do this, it would be well to write Mr. Baldridge, giving him advice as to what would be the next best thing to do, under the circumstances. Here is a case that is arising at short intervals throughout the entire year, and if the claims that are being made by clay product manufacturers are true (and there is every reason to believe that they are), that the difference in cost between frame and brick is only ten per cent, there should be some way of proving it—else what is the use of making the statement over and over again?

Another Way of Boosting Brick.

With the seal of the Society Advocating Fire Elimination in the upper right-hand corner of its letterhead, the Hinde Brick & Tile Co., of Sandusky, Ohio, writes under date of Dec. 10, scoring another point for extending the brick markets and pointing another way in which this can be done. The letter is short and to the point.

Please send us six "One Hundred Bungalows." We are loaning these books to prospective builders. Tell the other fellows to do the same. It is a good scheme.

Every once in a while, some clayworker seems to realize that his real competitor is frame and not burned clay. In other words, he realizes that the man who manufactures burned clay, while a competitor in one sense, is actually an ally instead of an enemy. The Hinde Brick & Tile Co. recognizes the fact that clayworkers are brothers and they give a big brother's advice. That line "tell the other fellows to do the same" speaks volumes for the clear sightedness of these men who hail from Sandusky, Ohio.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

IN addition to the decision of the Interstate Commerce Commission in the five per cent freight rate increase case, the following matters of interest have transpired before the Commission since our last issue:

Two new hearings have been set, including one on January 7, to be held at Akron, Ohio, before Examiner McKenna, of the Commission, in case No. 7442, of the Robinson Clay Product Company against the Pennsylvania Railroad Company et al. A hearing is also scheduled to be held at Henderson, Ky., on January 21, before Examiner Watkins in case No. 7156 of the Rockport Drain Tile Company against the Southern Railway Company.

The Chattanooga Sewer Pipe and Fire Brick Company, of Chattanooga,T enn., has entered a complaint with the Commissioners against the Southern Railway Company and a number of other carriers. It is the contention of the complainants that the rates on sewer pipe from Chattanooga to all points in North Carolina are excessive. The defendants are subjecting the complainant to rates that are unduly prejudicial to stations in North Carolina, the complainant says, and asks that an investigation be held and that the Commissioners cause a new and more just and equitable rate to be put into effect to and from said points.

The Commissioners have issued another order concerning the Kansas-Iowa brick rates, in Investigation and Suspension Docket No. 227. They say now:

"The order entered on December 8, 1914, modifying the

(Continued on page 85.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Overcoming a Natural Handicap.

MANY clay product plants have to contend with natural difficulties due to the lay of the land, but few of them have had so many handicaps to contend with, as had the Chattahoochee Brick Company, one of the largest concerns of its kind in the South.



Fig. 1.

The clay used at this yard is found along the banks of the Chattahoochee river, at a point about ten miles from Atlanta, Ga. The lay of the land is such that the yards and mill are necessarily located on the opposite side of the stream from the clay beds, the latter extending up and down the stream for nearly a mile.

The clay is excavated by steam shovels and loaded on to dump cars, hauled by an industrial locomotive. The tracks are necessarily parallel to, and near the water's edge, and, therefore, for the locomotive to reach the mill, a bridge would have been necessary, had it not been for the fact that this was impractical, owing to the chances of its being carried away at any time, by the heavy rise of the river which, at this point, often reaches more than twenty feet.

It was, therefore, decided to install a double Lawson tramway for this purpose, which was done in 1910.

The first installation was badly located with reference to the river's rise, and was changed in 1912 to the general arrangement shown in the accompanying views.

The first of these shows the loading bin. The track comes up on the grade shown in the left background, running on to a "Y" excavated into the bank opposite the end of the clay shed. From this "Y" the train of dump cars is backed into the sheds over the bins. A similar track comes from another pit in an opposite direction. The bins are double and the cars dumped from either side running out for that purpose on the trestle shown.

On each side of the bin and serving each tramway, are four loaders, or eight in all. Of these, however, only four are in service at any one time, shifting to the other four as required by the storage.

The loaders are under the sheds on each side of the bin and the cable at the foot of the tramway can be seen emerging from the shed.

The loading shed, containing the four loaders, is shown in the second view. Unfortunately, this view was taken during a Saturday shut down and the loading cars are, therefore, in the rear of the shed and not visible.

The only function of the operator is to raise the gate at the chute and allow the loader car to fill. The transfer from the loader car to the tramway car is strictly automatic as is also the return of the loader for refilling.

In Fig. 2 is shown the double tramway, the illustration being made from a photograph taken from the end of the loading shed. The tramway crosses the river on a clear span of 330 ft., rising to the tower in the distance and overcoming a total grade of 35 ft.

The cars are of pressed steel and contain 4½ cu. ft. each. They are about 10 ft. apart on the line.

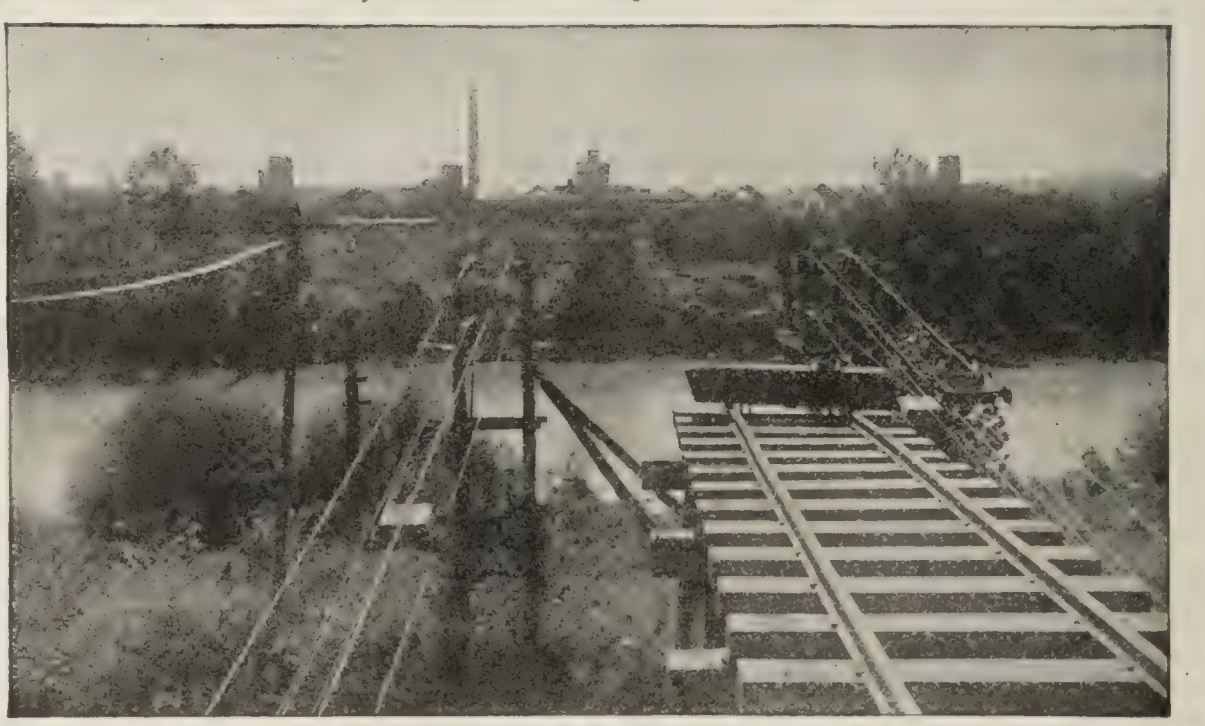
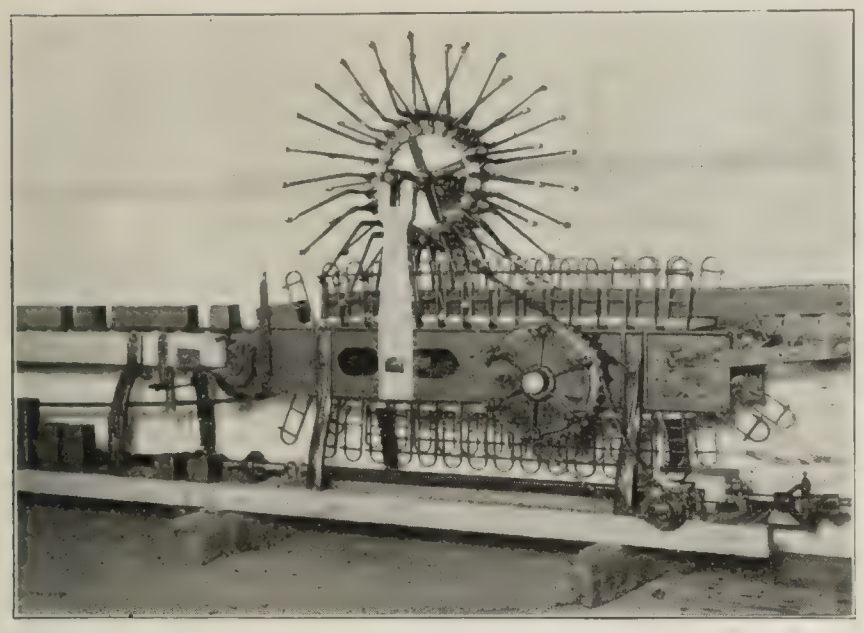


Fig. 2.

The speed of the cables, by the preference of the owners, is only 100 ft. per minute, and the total delivery of the clay is about 600 tons in 10 hours. As the tramway is now designed, a speed of 250 ft. per minute could be employed, and

were this done, one tramway alone would do all of the work—supplying clay for a daily output of 250,000 brick.

The total length of the tramway is 916 ft. The power is taken from the main shaft that drives the brick machines, and



Special Bensing Cutting Table Made for Fisher and Wilson of Bulawayo, South Africa.

the clay is automatically dumped directly into the hopper over the grinding rolls.

The tramway was built by the Consolidated Tramway Company, of Roanoke, Va., which concern has now passed into the hands of the Ambursen Company, of New York City, N. Y.

South African Plant Requires Special Table.

The accompanying illustration shows the special automatic cutting table built by the J. D. Fate Company of Plymouth, Ohio, for Fisher and Wilson of Bulawayo, South Africa.

Mr. Fisher, of Fisher and Wilson, came direct from Bulawayo to Plymouth to order the equipment for his new plant, which included the special cutting table shown.

In South Africa there is a demand for a great many different kinds of clay ware, and as there are few factories on the continent, their equipment would necessarily have to be such as to enable them to turn out a variety of wares to supply the needs of their customers.

For this reason it was necessary for Fisher and Wilson to have a cutting table that would meet a great many requirements. The cutting table shown in the illustration was built to cut hollow blocks twelve inches wide, seven and one-half inches high and in lengths in multiples of four and one-half inches. By leaving all of the wires in the reel, it cuts a block four and one-half inches long; by taking out every other wire, a nine-inch block may be had; by taking out two out of every three wires, a block thirteen and one-half inches long is obtained and by taking out three out of every four wires, an eighteen inch block may be obtained. In this way, the table is able to turn out hollow blocks in any size up to seven and one-half inches high and twelve inches wide.

The firm that purchased this table also makes end-cut brick. By using a double stream end-cut brick die and taking out every other wire from the reel, the table produces a nine-inch end-cut brick.

Paving brick, drain tile, promenade or floor tile and Spanish roofing tile can be cut on this table by making the proper adjustments, most of the ware cut being delivered on a twelve-foot belt.

The Fate Company also advises us that they are preparing to put on the market a table for large blocks, the Denison patent block and various kinds of hollow blocks from four by four inches up to twelve by twelve inches in size, cut automatically and delivered on end on a belt. The end-delivery feature makes it easier to handle the blocks than when delivered flat. This table is now being built, and it is believed that when completed will meet the requirements of nearly every hollow block manufacturer.

An Adaptable Steam Shovel.

The cut herewith shows the American "Road Builder" Steam Shovel which was a feature at the recent Good Roads Show, held in Chicago. This shovel while offered, in that particular instance, to the consideration of road engineers and others interested in good highways, attracted a great deal of attention from the manufacturers of paving brick who saw in it a possibility for materially reducing the cost of clay gathering.

All that is said in its favor, in connection with road work, can be given equal emphasis in connection with its clay gathering power.

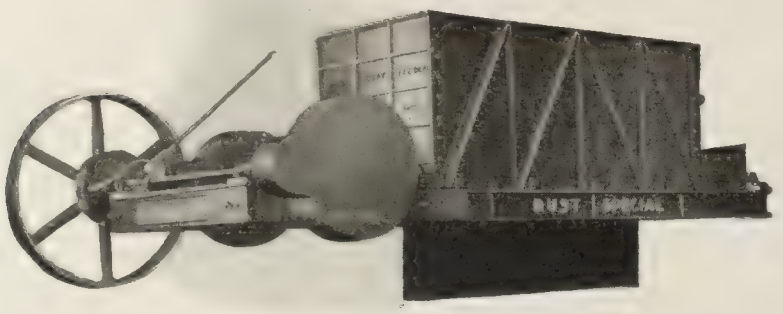
The traveling base, the rotating base, the rotating gear and front axle are open hearth steel castings. The driving axle is forged steel. The steel traction wheels are of large diameter and wide face to facilitate travel in soft roads. The rear wheels are drilled for attaching steel traction bars when required. Power is transmitted through the traveling base by a vertical shaft, steel gears and pinions to the rear axle. The rotating platform is supported on four steel rollers, and is rotated by a pinion meshing into a large gear attached to



American "Road Builder" Steam Shovel.

the lower base. The steel rotating base carries the principle machinery of the shovel. From this base is built out a substantial platform of steel plates and shapes forming a

station for the operator, and a support and floor for the cab. A pair of vertical engines are fastened to the side housings which in turn are bolted to the upper rotating base. These engines operate both the hoisting and traveling mechanisms. All engines and housings are machined to templets and jigs so the parts are interchangeable. The hoisting engines are exceptionally large and substantial being so designed to



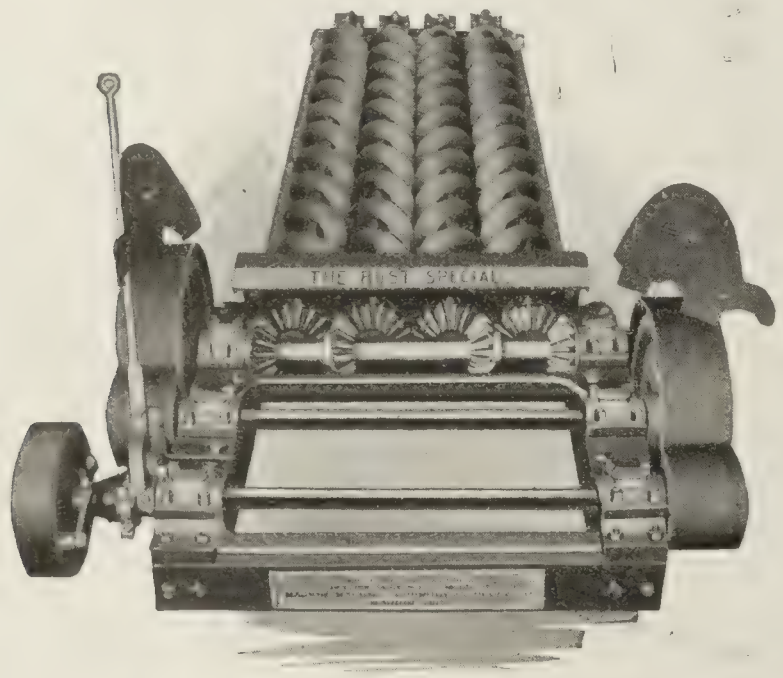
The "Rust Special" Clay Feeder.

secure large tractive power, so in case the shovel becomes mired or is working in a cellar or otherwise has to ascend steep grades, it can do so without difficulty. The crowding and rotating engines are of the same pattern and the crank shafts of the same size, making all parts of these four engines interchangeable. The boiler is of the vertical type made of the best materials and according to approved specifications. The coal bunker is located on one side of the boiler and the water tank on the other, and in the disposition of these elements a convenient arrangement for firing is secured. The boiler, coal bunker, water tank and all machinery that is mounted on the revolving deck are enclosed by a suitable cab. This cab is exceptionally large and roomy and convenient for the operator. The boom is built of steel shapes and plates reinforced to give ample strength. The sheaves are bronze bushed and fitted with grease cups.

One of these shovels is at work, at the present time, in the clay pit of the Whitacre Fire Proofing Company, at Chicago Heights, Illinois, where it is doing eminently satisfactory work.

A New Clay Feeder.

Encouraged by the success with which the "Rust Clay Feeder" has met in the clayworking industry, the Marion

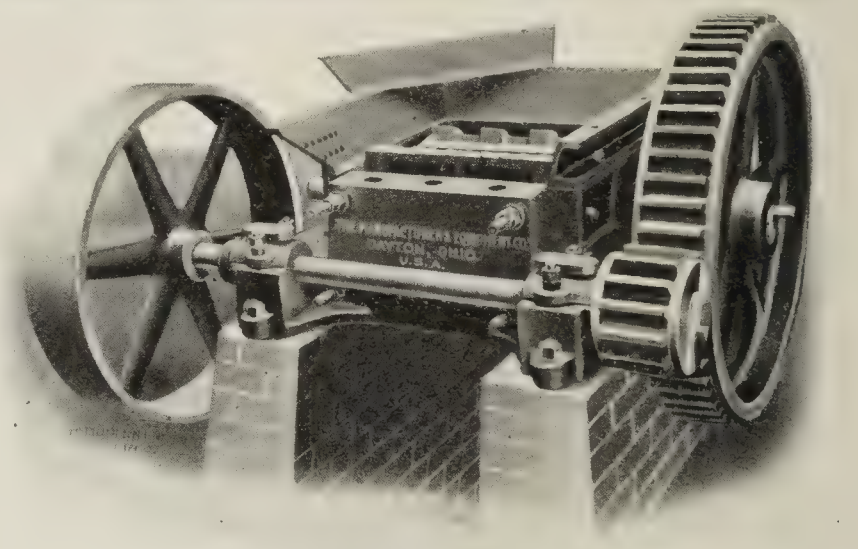


The Spiral and Gear Arrangement on the "Rust Special."

Machine, Foundry & Supply Company, Marion, Ind., have just completed and put on the market a new type of this feeder which will be known as the "Rust Special," and which is shown in the accompanying illustrations.

Most of our readers are familiar with the various types of "Rust" clay feeders and mixers which have been marketed by this company for some time. The first machine, type "A," was built about ten years ago, and it is claimed that this machine opened up the field in the clay feeder industry. The first machines of this type which were sold, weighed about three thousand five hundred pounds, but later this weight was increased to take care of the demand for a heavier machine.

About three years ago, the extra heavy right and left type "A" Rust clay feeder and mixer was developed. Prior to this time, the spirals in the feeders produced by the Marion company, all operated one way—to the right. With the advent of the extra heavy type "A" feeder, a machine was put on the market in which the spirals operated, two to the right and two to the left. It was found in the experience of this company with its clay feeders, that if the spirals were worked in the manner above stated—two to the right and two to the left—a very superior feed was produced in which the clay would be more thoroughly mixed toward the center and fed evenly to the disintegrator or drag belt. This feature has also been embodied in type "B" and "C" feeders.



An Efficient Shale and Clay Crusher.

The latest type of feeder to be produced by the Marion Company is the "Rust Special." This machine is expected to be far superior to any of its kind now on the market. Some of the features of this machine are:

First, there will be no exposed gearing. All gearing will be placed in oil housings so they will be continually running in heavy oil.

Second, the machine will be built with a drop bottom, hinged in the center, so that the materials under any two of the spirals can be dropped out at any time in order to get at the spirals quickly.

Third, the large gearing will be made throughout of semi-steel, built doubly heavy for any duty that the feeder might be called upon to perform.

Fourth, the eight gears that drive the spirals will be made of highest grade crucible steel and they will be entirely housed in an oil box.

Fifth, the four spiral shafts of this new feeder will be two and fifteen-sixteenths inches in diameter, whereas those in the former machines are only two and three-eighths inches, and the right and left spirals will be mounted solid onto shafts, thus increasing the capacity of the machine by at least fifty per cent.

The engineering force of the Marion Company has been at work for several months developing this machine and neither time nor expense have been spared to make it the best machine of its kind on the market.

A Dependable Crusher.

The Manufacturers' Equipment Company, of Dayton, Ohio, have for some time been putting out a new machine for the crushing of shale, fire clay, etc.

This machine is radically different from other types and is so constructed that it is easily possible to reduce one-man pieces to any desired size, at the expense of little power and a negligible amount of labor. It is built in sizes to crush anywhere from twenty to five hundred tons per hour, as wanted.

Actual experience has shown that the contents of a four-ton truck of one-man stone will very readily go through a twenty-four by fifty-four inch machine without help.

This crusher was originally designed for crushing rock phosphate, and more than sixty are being used in Florida and Tennessee alone on this class of material.

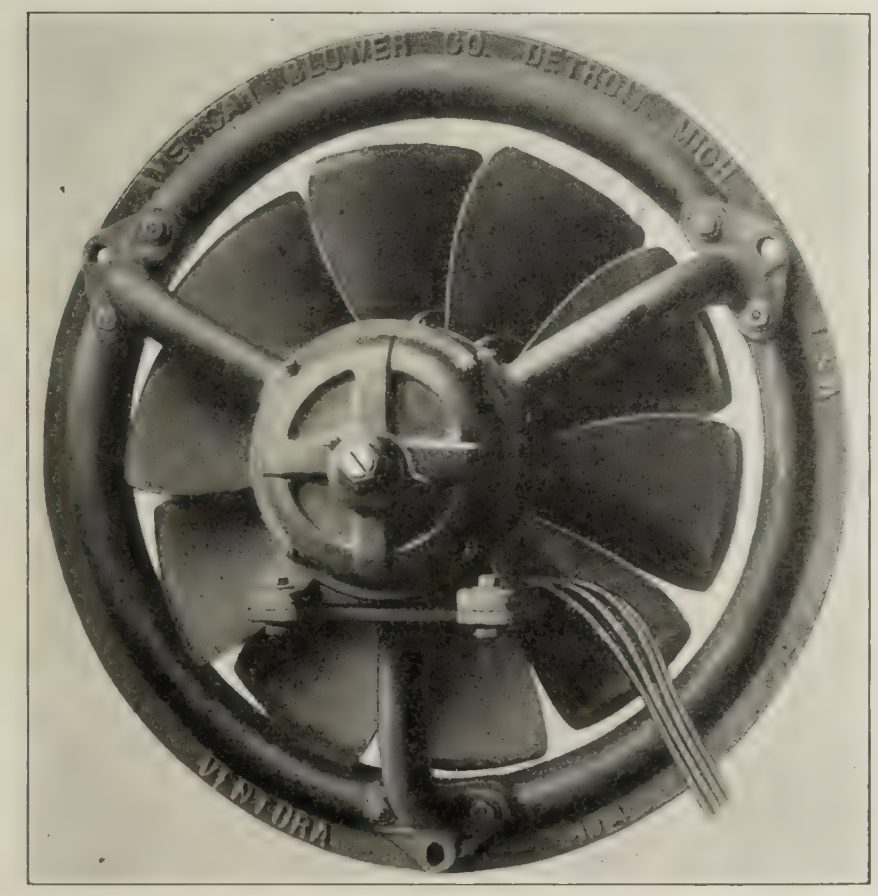
They are also used extensively for crushing limestone for blast furnaces, and railroad ballast, and quite a few of them are employed crushing hematite iron ore and manganese ore; both these latter materials being considerably more difficult to reduce than any material used in the manufacture of clay products.

The following points of merit stand out prominently; simple construction, all parts accessible for inspection and repairs, ready adjustment and a wide range of output, low height as compared to other types of crushers, smaller first cost, capacity considered, lower operating cost, the crusher requiring little or no labor in feeding.

Some of the users of this crusher include Lanyon Fire Clay Works, Hillsdale, Indiana; Harris Brick Company, Zanesville, Ohio; West Virginia Paving & Pressed Brick Company, Huntington, West Virginia; Western Brick Company, Danville, Illinois; Brighton Fire Brick Company, New Brighton, Pa.; Trumble Paving Brick Company, Glouster, Ohio; Walker Mills Stone & Brick Company, Pittsburg, Pa.; Standard Brick Company, Crawfordsville, Ind., and the Hydraulic-Press Brick Company, Cowen, Pa.

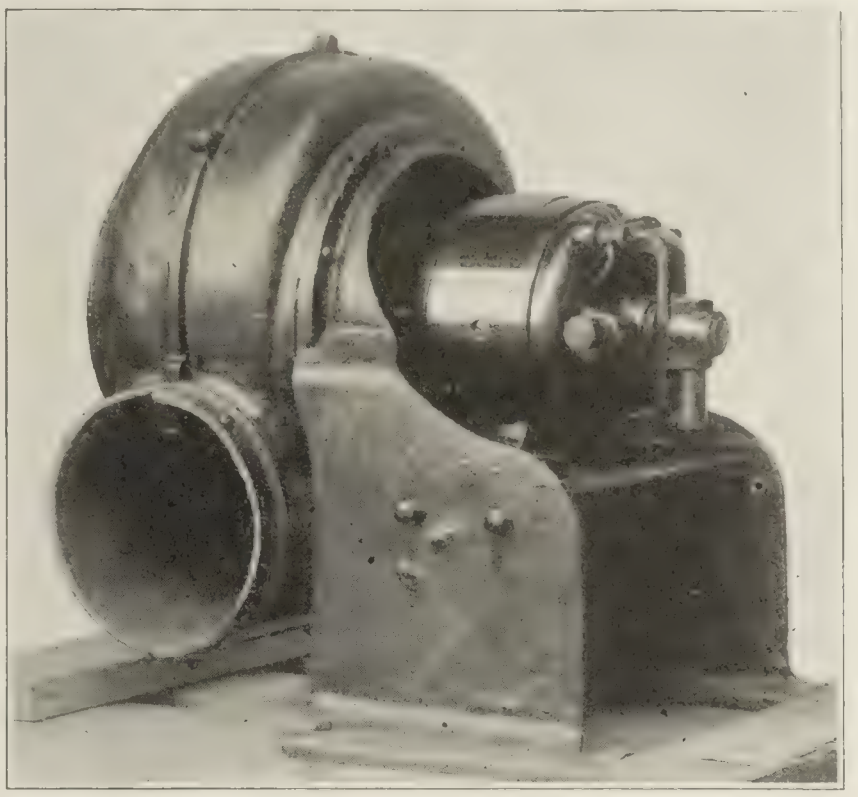
Westinghouse Company Has New Fan.

Medical science has proved the fact that men cannot work, either mentally or physically, to their full efficiency when subjected to bad atmospheric conditions. Hence many factories and mills, where the air in the working rooms is contaminated with steam, dust, fumes, foul odors, etc., have found that it is a paying investment to install artificial ventilating systems.



The New Westinghouse Fan.

A new type of ventilating fan that is said to be especially effective, has been recently put on the market by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and is shown in the accompanying illustration. The fan differs from the older style in having a large number of blades which are mounted on a wide central disk and have the ends abruptly turned up. The manufacturer claims that this design has been adopted after careful study and many experiments because it is noiseless in operation and highly efficient. The air is thrown straight forward at high velocity instead of being widely spread out and no air can flow back through the center of the fan, which often happens with the older design.



A Little Blower that Can Produce Considerable Pressure.

The unit is very compact and when it is installed, the motor projects but little into the room.

The motor is specially designed for this particular service. It is entirely enclosed and protected from dust, dirt, moisture, etc. It has a high overload capacity and readily drives the fan even against a strong back pressure from wind.

Special attention has been paid to making the motor thoroughly reliable, since it is ordinarily mounted in places that are difficult of access. It will run for long periods of time without attention and never requires more than an occasional inspection and lubrication.

Owing to the design of the fan and the skillful construction of the motor, the efficiency of these units is very high, that is, they move large volumes of air with minimum current consumption. Power is obtained from the electric light circuit.

For forcing air through pipes, Westinghouse Sirocco blowers are supplied. This little blower, which is also illustrated herewith, can produce considerable pressure and is suitable for forcing air out of underground and inside rooms, cooling motors and blowing away chips and shavings.

Klose Kiln and Dryer System.

The Klose dryer is located over the Klose continuous kiln and is built on lines that are symmetrical to that type of kiln. It holds the same amount of brick or tile per

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.



Dodge Line means "Everything for the Mechanical Transmission of Power." The most efficient and economical method possible.

DODGE MANUFACTURING COMPANY,
Works: Mishawaka, Ind. Branches Everywhere

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff . Strongest and most durable
Manufactured by
C. K. WILLIAMS & CO., EASTON, PA., U.S.A.
Correspondence solicited

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

SAVING

with Frink Pyrometers starts within one week of the receipt of your order. No interruption to the progress of your work. Ask us HOW.

The Frink Pyrometer Co. Lancaster, Ohio

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

THE RICHARDSON-LOVEJOY ENGINEERING COMPANY

COLUMBUS, OHIO

CERAMIC ENGINEERS
FACTORY ARCHITECTS

GEOLOGICAL EXAMINATION OF PROPERTIES
CLAY TESTING
INVESTIGATIONS OF MANUFACTURING PROPOSITIONS
PLANTS DESIGNED, CONSTRUCTION SUPERINTENDED AND OPERATIONS DIRECTED
DRIERS, FURNACES, KILNS
REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
DEVELOPMENT OF NEW LINES OF PRODUCTS

Pamphlet, "Ceramic Engineering." Free

running foot, and is filled, emptied and refilled at the same time that the kiln is filled or emptied. One man only is required to take the fresh ware from the cutting table into the dryer. The same man takes the dry ware from the dryer into the kiln and he also takes the burned ware out of the kiln.

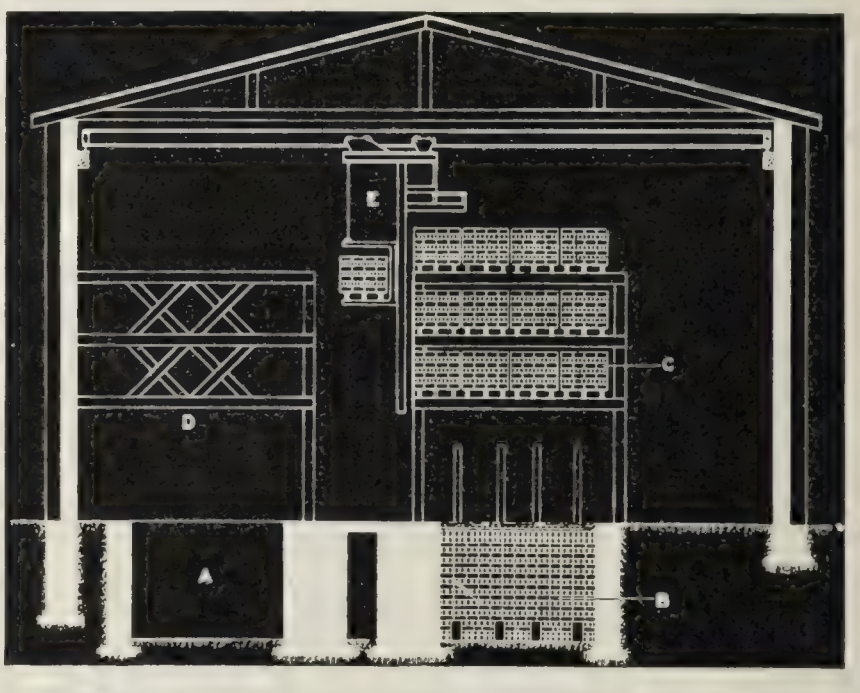
Locating dryers above continuous kilns is no new idea. Among the reasons that have previously militated against their general adoption, have been the all-important ones of not drying enough ware to keep the kiln going, of being costly to build, and of requiring too many men to operate them.

The Klose ring dryer eliminates all of these defects. With its holding capacity of several weeks' molding, it gives the ware plenty of time to dry, and, being timed with the kiln, the waste heat from the latter is used in the most economical way.

While the pallet supports have to carry a heavy load over a long span, their construction as trusses gives them great strength with but a small quantity of material.

The Klose ring dryer requires but one man to operate it, where usually three men are needed. This one man does what is required of him, without heavy work. Sitting in a cage, he does all of the lifting, lowering and transfering, simply turning the proper levers. All transports are short and straight, there are no corners to turn, no switches or turntables to work, or curves to run over.

Its arrangement as a whole is as follows: brick machine, kiln and dryer are in one building 40 to 60 ft. wide and about 160 ft. long. The brick machine is at one end, the Klose kiln is built as usual in the ground. The drying



(A) Section of Klose Kiln, Empty. (B) Section of Klose Kiln, Set. (C) Section of Klose Dryer, Filled. (D) Section of Klose Dryer, Empty. (E) Electric Crane and Hoist.

racks are over this kiln, arranged in such a way that they leave two alleys along the whole building. An I-beam crane spans the whole width and travels the whole length of the building. On this crane hangs and travels an electric trolley hoist of the four hook type. Same is built with an arrangement which prevents swinging of the load. It holds the pallet grip by means of which it picks up, transfers and deposits the pallet (holding 500 to 800 brick). The pallet-grip being suspended at four points, holds the load always straight and level.

The operation is as follows: The crane operator picks up a pallet of fresh brick at the cutting table, transfers it along one of the alleys to the proper empty rack, takes it sidewise into the rack and deposits same. He backs up now into the alley and moves along the alley to the rack

of the dryed brick, goes sidewise into this rack, picks up a pallet of dry brick and backs into the alley where he lowers same and moves it sidewise into the kiln. Here he picks up a pallet of burned brick, raises and takes same into the alley, where it is deposited upon a car running on rails to the stock pile or railroad car or takes it to a car standing at the end of the kiln. The operator proceeds now to the cutter after another pallet of fresh brick and repeats these operations over in succession again. The racks where dry brick are taken out and fresh brick taken in, are always close together and almost straight over the setter and loader, which makes all transfers very short.

It appears that a delay at one point will delay the whole plant. It is, however, not so. By the use of some common dryer cars the molding department is made independent of the hoist for many hours. The setters and loaders in the kiln have room for several cars, which gives the crane operator a certain leeway in case of unforeseen delays.

K. W. Klose, of Kansas City, is the inventor of this dryer. He is convinced that with the Klose kiln it makes a combination, the great economical features of which must ultimately forge a prominent position for it in the clay industry.

Schofield-Burkett Company Has Successful Year.

The attitude of the clayworker toward improvement in his method of gathering clay, is indicated from the fact that the Schofield-Burkett Construction Company, of Macon, Ga., has just completed what it considers a very successful year in the marketing of its clay digging and conveying machinery.

The excavator which this company has been putting on the market was patented in 1911 and is composed of a specially built double drum hoisting engine of a very heavy type and a system of cables to haul the scraper back and forth from the clay pit or bank to the storage shed or car. The steel cables are run through sheaves which are specially designed to make as little friction as possible with the cables, thereby lessening the wear and tear on these cables.

The operation of the excavator is very simple. The clutch is thrown in on the forward drum and the scraper hauled forward very slowly until it is loaded. The speed is then increased and the scraper conveyed to the dumping place, where it is automatically dumped. The clutch is then thrown out on the forward drum and the clutch on the back haul drum is thrown in, and the scraper pulled back to the loading place.

The scraper is made of heavy sheet steel, usually square in size and to a depth to correspond with the capacity desired. The scraper is slopped up in the back to facilitate its backward journey when obstacles are met with. It is made with or without teeth, in cases where the digging is hard, the use of teeth being advocated. The operator of the excavator can tip the scraper to any angle desired by the adjustment of a lever, the tipping being done from the engine.

One of the features of this machine is that with one adjustment of the heavy parts, an area of several acres can be covered without resetting. This is accomplished by a specially built snubbing block, which is operated by the loader and which is set to bring the scraper back to a designated part of the clay pit or bank.

This machine has been known to mix several different stratas of clay in a clay bank forty feet deep. This is done by setting the forward lugs on the scraper so that it will dig only one or two inches deep. The excavator is worked

Increased Efficiency *Greater Economy*

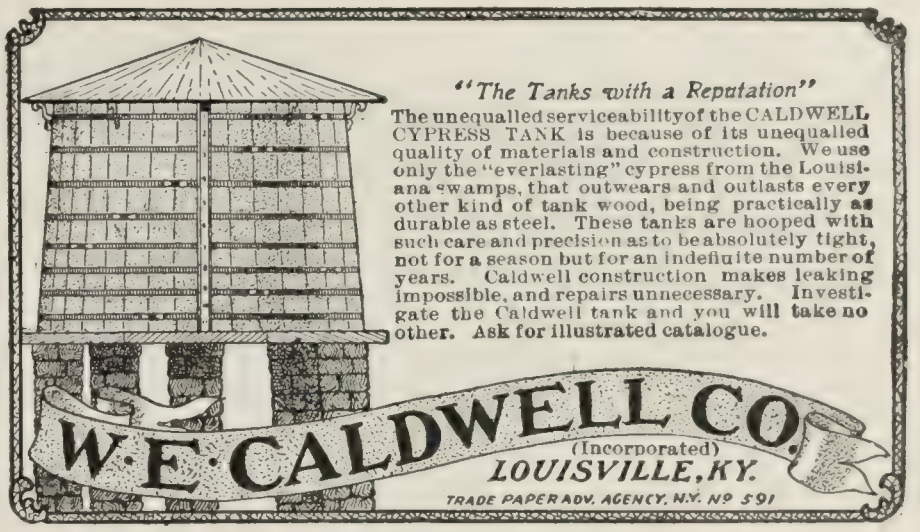
Results obtained from use of

"Fuller Quality"

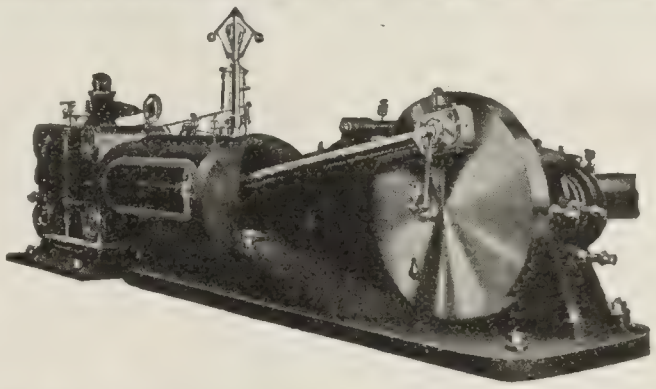
Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania



POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 **BURLINGTON, IOWA**





Pyrometer Advice

Don't condemn pyrometers because you failed to get results with the ones you have used. It is evident you have never installed the STUPAKOFF STANDARD LE CHATELIER PYROMETER. Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa.

The Improved Flue System Kiln
HAS NO SUPERIOR
For Producing FIRST GRADE WARE

Paving Brick, Building Brick, Fireproofing, Silo Blocks, Quarry and Roofing Tile, Drain Tile—ANY CLAY PRODUCT.

Ask us about it.

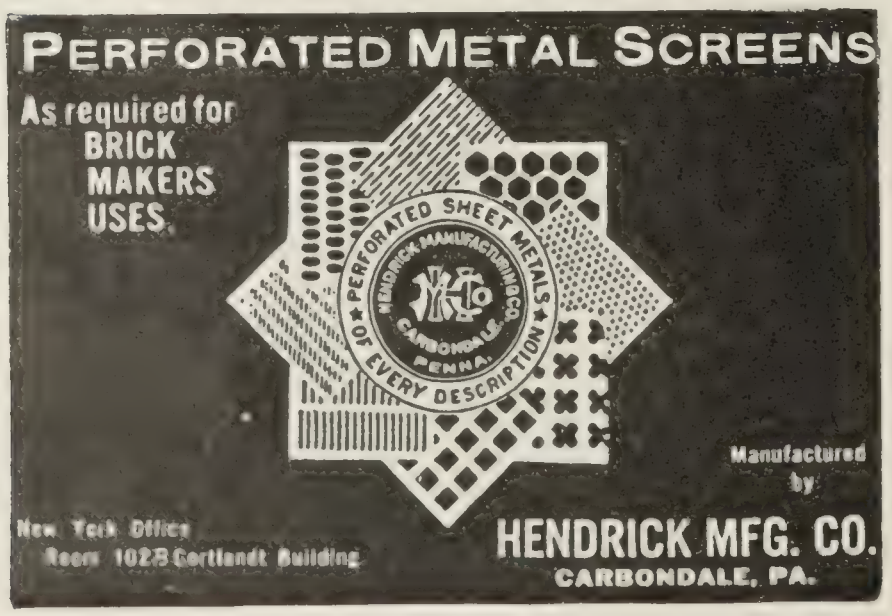
Geo. E. Snowden & Co.
New Cumberland, W. Va.

The Louisville Machine Company
Louisville, Ohio
Manufacturers of Clay Working Specialties

OUR LINE:

Piano Wire Clay and Sand Screens; Special Screen Plates for all Dry Pans; Plain and Ornamental Building Block Dies; Brick and Fire Proofing Dies; Hand Cutting Tables; Conveyors and Elevators; Dry Pan and Pug Mill Clay Feeders.

Patentees of
The Roller Process Paving Block System



on an incline which may be either up or down from the engine, and the scraper, starting either at the top or at the bottom of the first stratum, skims an equal amount of clay from off each stratum the entire length of the incline. The method produces a uniform mixture in the clay.

The operation of the average size excavator requires only two or three men, while the largest size never requires more than four, and these do not necessarily have to be skilled mechanics.

A similar machine is manufactured by the Schofield-Burkett Company for stripping the overburden or top soil from clay banks, this being done without cars or tracks. A machine of this type has been known to dig and convey dirt several hundred feet at a cost of four cents per cubic yard.

A New Pottery Molding Machine.

A machine designed for the rapid production of small pottery wares has been recently put on the market by the Baird Machine and Manufacturing Company, of Detroit, Mich.

The long experience of this company in the manufacture of pottery machinery has enabled them to place this new machine on the market under a strong guarantee. The majority of potteries, especially those manufacturing flower pots and similar pieces, have long felt the need of a small machine to handle sizes under three inches, and in their new size No. 0 the Baird Company have supplied this necessity. This machine is devoid of any freak attachments, but in it are embodied all of the good and thoroughly tested features of their former machines, as well as several new improvements that are advantageous in the manufacture of small pots.

The policy of the company to thoroughly try out and test every new machine before accepting orders for same, has been carried out. This machine has been in operation almost a year under many trying conditions so that it has no hesitation in guaranteeing the material and workmanship put into the machine. A descriptive circular giving further details will be mailed by the Baird Company to any who are interested in this new machine.

Ricketson's Special Mortar Colors.

So much has been said of late, about the importance of the mortar joint in brickwork, that it is well to know that manufacturers of mortar color are keeping abreast of the times, and making special mixtures to suit special shades and textures in face-brick. As an instance of this, one manufacturer of face-brick in the Middle West, after trying various combinations of color, submitted his entire line of shades and textures to the Ricketson Mineral Paint Works at Milwaukee, Wis., with the result that they were able to give him an exact blend in their mortar color, which proved complimentary to every shade in his line. There is a science in mixing mortar just as there is in any other point in building, and no small part of this science is in the proper selection of mortar color. The builder cannot go far wrong who pins his faith to Ricketson's "Red Brick" brand, and who follows their printed instructions as to color blending.

Erie Pump Works Reorganized.

A change in organization has been made in the Erie Pump & Engine Works of Erie, Pa. This concern has recently been consolidated with the Northern Equipment Company, also of Erie, who are manufacturers of boiler

feed water regulators and governors. The new combination will be known as the Erie Pump & Equipment Company, and will occupy the property of the Erie Pump & Engine Works. The officers of the new company are E. W. Nick, president and treasurer; D. H. DuMond, vice-president and V. V. Veenschoten, secretary.

Wants Lincoln Highway Paved with Brick.

During the Iowa Authors' Homecoming, which was held in the middle of October, at Des Moines, Ia., a number of eminent writers who claim Iowa as their native soil were present, among which were Emerson Hough, Woods Hutchinson, Herbert Quick, George Fitch, and nearly all of the Iowa editors. There were banquets and automobile rides into the country in connection with the celebration. It was on one of these rides that the editor of one of Iowa's large dailies received the inspiration for the following eulogy on brick roads which appeared in the "Cedar Rapids Republican":

"The best piece of country road in Iowa is four miles of brick, laid out of the city of Des Moines, northwestward. The road has been in four years and the brick in it show little or no wear. Brick used on country roads will, we believe, last almost indefinitely. Fifty years will see it still in place, if it is vitrified brick. We have had brick in Cedar Rapids that has lasted twenty-two years and was still in fair condition when taken up, although laid on nothing more firm than another layer of brick.

"Brick is the only paving material that is available in Iowa that may be called even semi-permanent, for all talk about permanent roads is, of course, nonsense, there being in the very nature of things no materials that are really permanent when used in road making. But brick will come the nearest to it.

"The four miles laid out of Des Moines were laid on concrete, the concrete base on the edges flaring up into an apron, about eighteen inches wide, resembling the apron on a curb stone, now used on many streets. Between these two concrete aprons is twelve feet of brick, making the whole roadway about fifteen feet, or wide enough for two vehicles to pass each other, the bulk and body of the traffic being all the time on the brick. But even under that limited wear the concrete edges show more wear than the brick center, showing that concrete if used for the main roadway would not last even under farm and purely pleasure traffic. The brick used on the Des Moines roadway are not as good as those used in this city, for they are small brick. They were laid at a cost of $12,000 per mile, which is about the lowest price for which hard roads can be made in Iowa, or anywhere else.

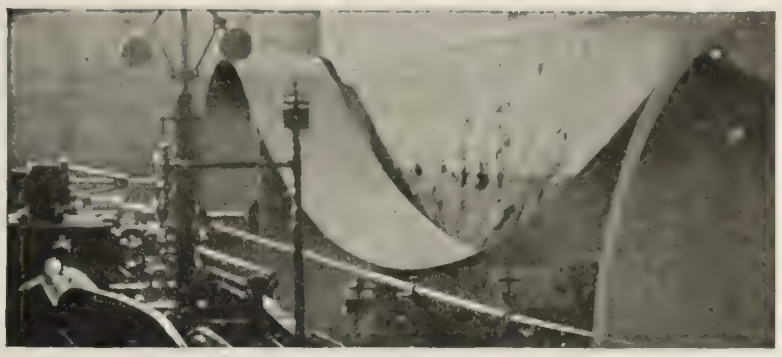
"When one rides over that country pavement he cannot help wishing to live long enough to see the whole Lincoln highway from ocean to ocean paved in that way."

Standardizing Fire Brick Lists.

In the past more or less confusion has existed in the matter of purchases and sales of magnesia and chrome brick used largely in the open hearth and copper smelting processes, says "Steel and Iron." It has been customary in some cases to make a brick 9x4½x2½ inches as a standard, in other instances measuring 8¾x4⅜x2⅜ inches have been made. Nor has there been any uniformity in the method of making quotations.

Many users have been purchasing the 9-inch straights at a tonnage price and the sizes such as keys, at a price per thousand. Others are buying entirely at a price per thousand while still others buy wholly on a tonnage basis.

In order to simplify this business, the Harbison-Walker Refractories Company has decided to establish for their



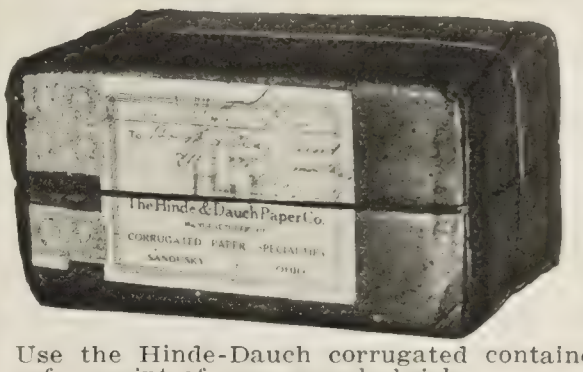
DO YOU USE CLING-SURFACE?

Cling-Surface quickly demonstrates real and lasting economy. Its strongest friends are those who had previously been most skeptical.

Ask for our literature and trial offer.

CLING-SURFACE CO 1029 Niagara St Buffalo N Y

BRICK BY PARCEL POST



An item of expense that is by no means a small one, is found in the cost of selecting, marking, packing and shipping sample brick. When, as in many instances, they reach their destination in bad order, the whole expense item is a dead loss.

Use the Hinde-Dauch corrugated container and insure the safe receipt of your sample brick.

Proven the best in actual test.

THE HINDE & DAUCH PAPER CO,. Sandusky, O.

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers, for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation

and will reduce costs of delivering your material to your plant, thus increasing profits.

All About Modern Industrial Railways

Write us for particulars

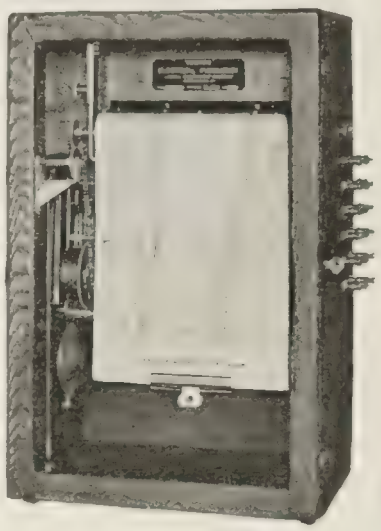
Davenport Locomotive Works

DAVENPORT, IOWA

Branch Offices

St. Louis: 654 Pierce Bldg. — New Orleans: 208 Godchaux Bldg.
Chicago: 12 and 14 So. Canal St. — Pittsburgh: 405 Oliver Bldg.
Seattle: 617 Western Ave. — Montreal: 286 St. James St.
St. Paul: 1308 Pioneer-Press Bldg. — Winnipeg: 45 Canadian Life Block
New York City: 362—50 Church St. — Vancouver: 175 Cordova St.

Stop and Consider



the advantage in DOLLARS and CENTS of having a continuous record of the TEMPERATURE in all your lighted KILNS, on one chart.

The combinations possible with the TWINKO line of

Multiple Record Recording Pyrometers

are too numerous to describe in this limited space.

For example, the Recorder shown in cut will furnish one record each from six kilns; records from two points in three kilns, or three points in two kilns. Naturally the more information you have, the closer your control of firing conditions.

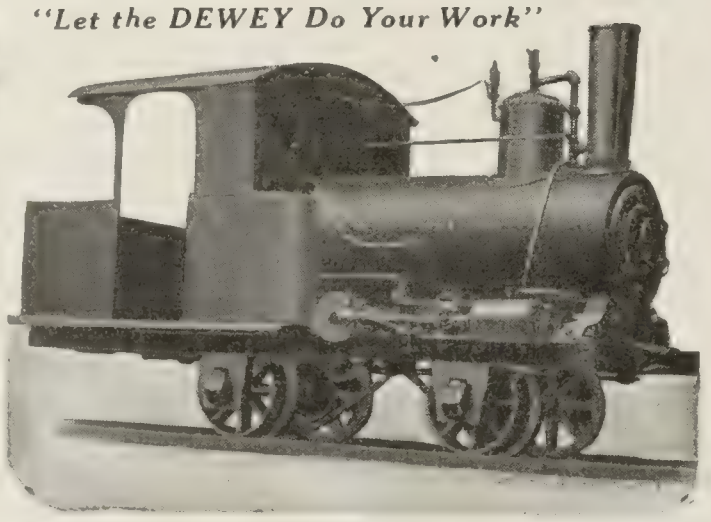
Just tell us how many kilns you fire at one time, and we will do the rest.

Thwing Instrument Company,

437 N. 5th Street Philadelphia, Pa.

$1200 Buys a Dewey

"Let the DEWEY Do Your Work"



And no matter how much more you might pay, you wouldn't get anything better—dollar for dollar. The Dewey is far ahead of any other locomotive on the market. Let us prove it—a card will bring the truth.

DEWEY BROS., Goldsboro, N. C.

chrome and magnesia brick one standard measuring 9x4½x2½ inches with the corresponding series of sizes, and dating from January 1, 1915, their regular form of quotation on all magnesia and chrome brick whether standard sizes or special shapes will be on a tonnage basis with a definite scale of extras as follows:

Base Prices and Extra on Standard 9″ (9x4½x2½)	Magnesite Brick Pr. Nt. Ton Base Price Over Base	Chrome Brick Pr. Nt. Ton Base Price Over Base
No. 1, 2 and 3 arch	$ 5.00	$ 5.00
No. 1, 2 and 3 wedge	5.00	5.00
No. 1, 2, 3 and 4 keys	5.00	5.00
Soap and splits and feather edge	15.00	15.00
Special shapes—"Class A"—Rectangular shapes not exceeding 15″x6″x4″ nor less than 8″ in length, 4″ in width or 2½″ in thickness, in lots of 1,000 pieces or more	5.00	5.00
Special shapes—"Class B"—Rectangular shapes from 15″ to 18″ in length, 4″ to 6″ in width, and 2″ to 4″ in thickness, in lots of 1,000 pieces or more	8.00	8.00

Prices on Class "A" and "B" shapes in less than specified quantities, or on specials, not included in above, on application.

The quoting of a tonnage price throughout will not only avoid confusion, but insure fairness in prices. A price per thousand pieces on brick made from an expensive commodity such as magnesite or chromite necessarily introduces the question of the actual weight of the brick which will unavoidably vary slightly from time to time. If sold on a tonnage basis the slight variations in size or weight automatically adjust themselves equitably to both buyer and seller. It is to be noted that the placing of definite extras per ton on the so-called sizes such as keys, wedges, etc., does not actually raise the price per thousand, as their weights is very considerably less than the straight brick. In the case of soaps, splits and feather edge at $15 extra per ton over the base price the cost is actually less than when purchased at a price per thousand pieces uniform with the nine-inch straights.

The scheduling of definite extras on what are termed difficult shapes, will also tend not only toward fairness in prices, toward clearing up much confusion in the minds of the engineer and purchaser as to the relative cost of various types of design.

Remove Obstacles to Use of Domestic Clays.

S. W. McCallie, state geologist of Georgia, holds four conditions responsible for the handicap that he finds against the use of Georgia kaolins in the manufacture of pottery.

First, there are the imported managers of potteries who are prejudiced toward native clays. Second, Georgia kaolins have been placed on the market in an unsatisfactory form. Third, freight rates are discriminatory against domestic clays and in favor of foreign clays. And fourth, he points out the fad for foreign-made pottery.

The remedy for the first condition is obvious. Either the matter-of-course recommendations of English-trained pottery superintendents in the choice of clays should be overruled and American clays used, or the superintendents themselves should be displaced.

In regard to the second condition, all the large kaolin producers in Georgia have erected modern clay-refining plants and are employing trained men as managers. These plants are marketing clays uniform in physical and chemical properties, he says, and therefore, are extending their market constantly and increasing their output.

The matter of rail freight rates more than offsets the protective tariff of $1.25 a ton on imported china clays, and this condition should be corrected.

Mr. McCallie believes that the prejudice against home-made goods, "which too often overbalances our patriotism and causes us to purchase foreign wares in preference," can be overcome by co-operation all along the line and

that the effect would be a material stimulation of the clay industry.

As to the feasibility of establishing potteries in Georgia, he says:

"The quality of Georgia clays for white wares has been proven conclusively. The abundance of these clays and the inexpensive cost of mining cannot be questioned. The recent investigations of the state geological survey seem to indicate also that Georgia has an abundance of feldspar and quartz suitable for the manufacture of pottery. The lack of skilled labor is a temporary disadvantage in the building up of a pottery business, but, as in the clay refining business, it can be readily overcome by the importation of trained potters. This seems to be an opportune time for securing foreign labor trained in the pottery industry. Fuel, in the form of coal, may be obtained from the Georgia, Alabama or Tennessee mines. Suitable coal can be had at very low rates.

"I am of the opinion that Georgia offers special inducements to those interested in the pottery industry. Their factories, located in Georgia, would have material advantages in supplying our southern market and could at the same time bid successfully for the western as well as the eastern trade."

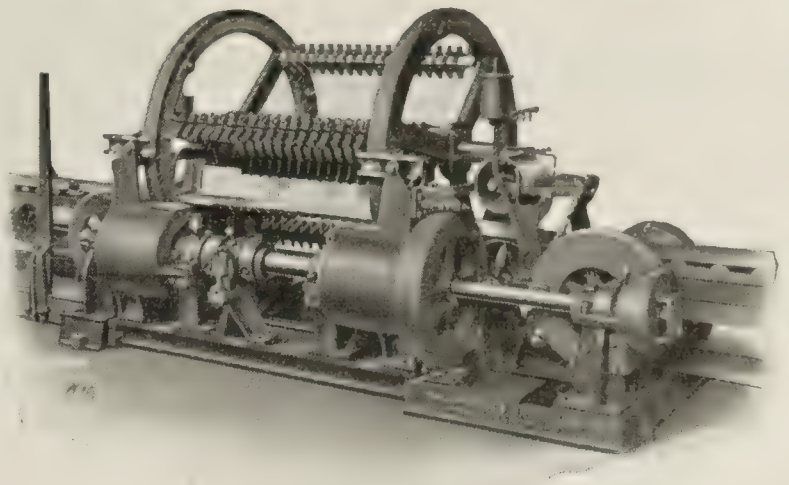
"They Should Have Stayed Off."

We are indebted to C. W. Brannan, of Bellevue, Ohio, for a clipping from the "Thresherman's Review and Power Farming" journal, regarding the progress of a traction engine that made its mark in Fort Wayne, Ind. It has a message in it, for others than members of threshing crews:

"We note from a recent number of the Fort Wayne (Ind.) 'Journal' that four members of a threshing crew were arrested near that town, charged with the violation of a city ordinance prohibiting the operations of traction engines on paved streets. It seems that early that morning the mayor of the city noticed that a traction engine had plowed down an asphalt paved street, cutting a trail in the pavement, and immediately dispatched officers on the trail of the crew. The outfit was being taken from Payne to Ligonier, and instead of circling around the paved streets, the men brought the engine directly through the city regardless of asphalt pavement. *The paper reports that the brick street over which the outfit passed was unharmed,* but the asphalt pavement was badly marked.

"One of the items that makes for the ill favor with which the traction engine is regarded by road men, is the unwillingness of some operators to use judgment in traveling the roads. If the crew in question had been willing to take the time to go around this piece of asphalt paving, their use of the brick pavement *which was amply able to resist such traffic, would never have been noticed;* instead, the rig was sent over relatively soft asphalt, resulting in the arrest of the crew and a probable strong feeling against future traction engine travel on the streets of Ft. Wayne that it will take a long time to dissipate, if this can ever be done. Considering the trouble the fraternity in New York and Pennsylvania have been having to get permission to use the roads at all for their traction engines, it behooves threshermen and operators of traction engines everywhere to use the utmost care in traveling improved roads, and particularly to keep off the streets or avenues in the cities that are evidently unable to withstand such traffic. The Ft. Wayne incident, for instance, might have been avoided by a few blocks detour. The owner of this outfit gave bonds for appearance in the city court, but we have not heard the result. In any event it would have been cheaper to have gone around than

New Multiple Brick Cutter

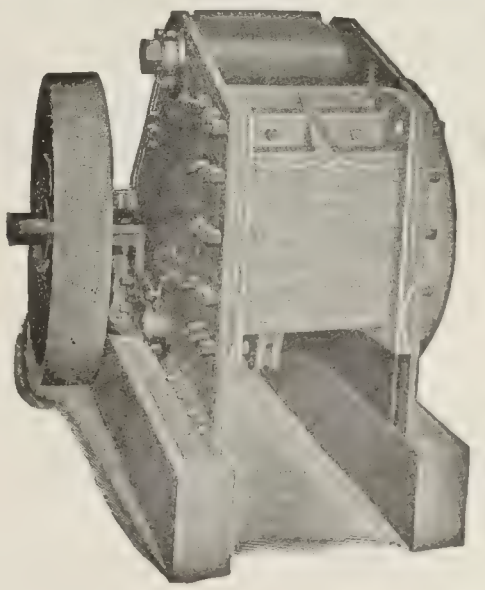


THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

Saving Money
By Efficient Machinery

CHAMPION



CRUSHERS

A Champion crusher will save the cost of sledging shale, fireclay or other hard materials. It will also save the wear and tear on a dry pan by furnishing a small product of uniform size. Why not install a crusher on trial?

Write to *Ask for our complete line.*

The Good Roads Machinery Co.
Kennett Square, Pa. 1632 Oliver Building **Pittsburgh**

Right Now

is the time to practice
economy—by adopting

"NUGGET" Babbitt

Made Expressly for the Brick Trade

AFTER exhaustive research—including complete physical tests and general conditions incident with brick machinery operation, "NUGGET" Bearing Metal is found extremely efficient and economical.

Its hardness assures great wear resistance —coupled with high compressive strength and ability to withstand heavy duty.

Made in Round Cakes to Fit Your Ladles.

Price 15c per lb.

Manufactured solely by

The Cleveland Alloys Co.

Bearing Metal Experts

Cleveland, - Ohio

LEHIGH PORTLAND CEMENT COMPANY
ALLENTOWN, PA. AND CHICAGO, ILL.
LEHIGH PORTLAND CEMENT
CAPACITY 12,000,000 BBLS YEARLY

Lehigh's

The Cement for Paving Brick Grout

Lehigh is High in Strength, Uniform in Color and Fineness. You Don't Have to Guess with Lehigh.
Specify and Use Lehigh in all Brickwork. Remember the Mortar Joint is an Important Factor in the Wall.
Use Lehigh and Cease to Worry.
It Assures Satisfaction Under All Conditions.

Lehigh Portland Cement Co.

Main Office ALLENTOWN, PA.
Western Office CHICAGO, ILL.

11 Mills—Annual Capacity Over 12,000,000 Barrels

to have had the delay and expense caused by the arrest. Regard for the rights of others and the use of judgment in traveling improved highways and streets will do much to dissipate the disfavor with which the traction engine is regarded in this respect in many quarters."

Spokane Large Clay Center.

Clay products valued at over $750,000, or one-third of the total amount manufactured in the state of Washington, were produced during 1914 by Spokane factories, according to the "Spokane (Wash.) Chronicle." The output represents two thousand carloads, shipped to all parts of the Pacific northwest, including Edmonton, Calgary, Victoria and Vancouver, in Canada, in addition to Montana, Idaho, Washington and Oregon.

The value of the entire output of the clay products manufacturing industry of Washington for the year is estimated at $2,300,000, or approximately the same as in 1913. Last year Washington stood seventh among the states of the country in the output of clay products and fifth in the value of the output. Spokane county stands second in the state this year in production, King county leading by its large exportations.

The feature of the year's business for Spokane was the large amount of sewer pipe manufactured. This item led all others, amounting in value to $250,000 and exceeding the output of all previous years. Practically the entire amount went to points outside the Spokane district, showing the ability of the local product to enter distant territory and compete with the factories of those sections, Coast cities were among the largest users of Spokane sewer pipe.

Architectural terra cotta valued at $180,000 was manufactured, fire brick to the value of about $125,000, and common brick to the extent of about $100,000.

The Washington Brick, Lime and Sewer Pipe Company, operating five factories in the Spokane district, has made extensive shipments to points as distant as Vancouver and Victoria in Canada, Portland and Boise to the south, Edmonton to the north and Plentywood, Mont., to the east. The company maintains selling offices at practically all important northwestern cities.

The American Fire Brick Company made large shipments of sewer pipe to the Coast cities and has sold an unusually large amount of tile and fire brick.

Illinois to Have More Brick Roads.

The board of supervisors of Vermilion County, Ill., have started the biggest public improvement ever attempted in the county—that of spending $1,500,000 on its highways. When the work is completed every town in the county will be connected with a network of roads, many of which will be "paved with brick." At the fall election the proposition to issue bonds for the above amount was carried by a big majority, and Vermilion County will be the first county in the state to have a system of permanent good roads.

One of the first roads to be improved will be the Chicago road, on what in early times was known as the Hubbard trail, beginning at the south end of State Street in Chicago and extending through eastern Illinois to this city.

Another road to be improved will be the Lincoln highway, over which the martyred president traveled when a circuit riding lawyer. This road leads west from Danville through Champaign and Urbana and on to Decatur.

Both of these highways will be built of brick and other types of road construction through the county, the Hubbard trail running north and south and the Lincoln road east and west.

Diverging from these other roads will be built, the work being carried on at a number of places at the same time. One hundred and seventy miles of improved roads is contemplated.

The movement was started last spring with but little hopes of the bond proposition carrying when it was submitted to the people, but after a strenuous campaign, when the votes were counted, the bond issue had a majority of nearly 2,000 and a majority of 69 over all votes cast. It was not necessary to have a majority of all votes under the law, but the last figures will stop any attempt that might have been made to hold up the proposition.

The board of supervisors this week adopted a resolution to place bonds on the market, and by spring it is believed the work of building the new highways will begin. Hundreds of Vermilion County residents will be given work, and the greater part of the money spent for the improvements will be kept at home.

Good roads enthusiasts were more than pleased with the prospect. It is a far cry from the Indian trails of early times in Illinois to brick pavements, but Vermilion County, noted in the past for her mud roads, almost impassable in the springtime, has become the pioneer in the new kind of roads that will be good the year around.

Where the hauling and traffic is heaviest the pavements are to be eighteen feet wide, in other places they will be ten to fourteen feet. The bonds are to extend over a period of twenty years. All pavements are to conform with the specifications laid down by the state highway commission for state aid roads. Just at present Vermilion County is building a pavement under the state aid plan, which will cost $60,000. This work is well under way and will be completed in the early spring.—"Chicago Herald."

Drainage in Alabama Essential.

Although farming in the gulf coast region does not require the paraphernalia of a farm in the North, experts declare that farmers must establish systems to drain their lands. This is due to the great amount of moisture that falls in this section each year.

Realizing the opportunity for a bigger market for burned clay, offered by this condition, Dr. L. L. Duggar of Mobile, and Mr. J. L. Ballard of Jackson, Ala., have decided to install a regular outfit in their brick factory at Calvert for the manufacture of drain tile.

Four samples have been turned out which government men say are as fine as can be made in any part of the country.

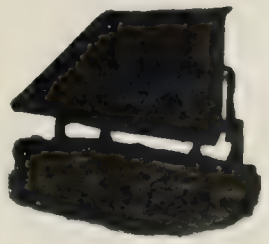
The Ballard Brick Company, as the corporation is known, has general offices in Mobile, but its kilns and plant are at Calvert, in the extreme northern part of the county. They have 430 acres of ground and brickmakers say that their plant is one of the finest in the South.

Dr. Duggar says the tile is "Mobile county tile for Mobile farms of Mobile county clay."

The first samples are three inch, four inch, six inch and eight inch tiling, and later there may be other sizes. The tile are cut thirteen inches long, but when burned shrink one-half inch and measure when burned 12½ inches in length.

The plant is two years old and was organized in 1912. Its products find a sale all over the state, but just this summer it was decided to make tile for drainage work.

Lakewood Equipment For Your Clay Plant



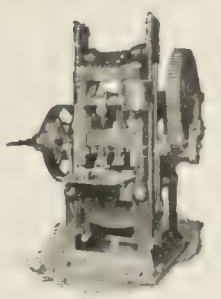
Bands, Kiln.
Bearings.
Brick Pallets, Pressed Steel.
Cars, Dryer.
Cars, Transfer (Electric).
Cars, Clay.
Represses.
Platform Cars with Wood or Steel Plate Top.
Portable Tracks.
Turntables.
Ball Bearing Turntables.
Gable Bottom Cars.
Switches.
Rotary Scoop Cars.
All Round Dump Cars.
Miniature Hand Repress.
Richardson Double Die Steam Repress.
Buckets.











Write for Catalog No. 11

Lakewood Engineering Co.

Formerly the Ohio Ceramic Eng. Co. Cleveland, Ohio

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

The
KLOSE KILN

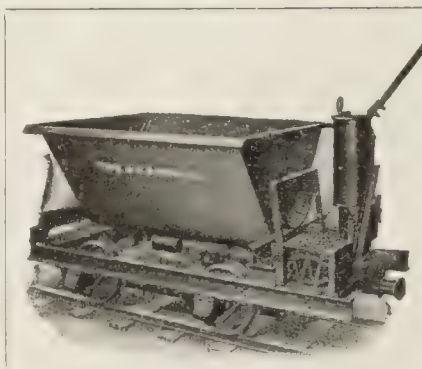
The only practical continuous kiln for either large or small capacity. Cheapest and simplest in construction. One plant which has in operation a large Klose kiln (probably the largest single fire continuous kiln in this country) is going to build another Klose kiln next Spring.

Write for particulars and references.

K. W. KLOSE

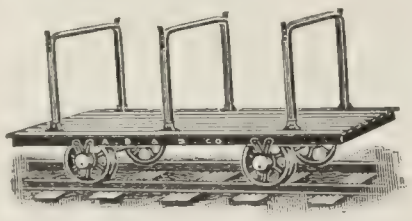
4239 Benton Blvd. :: Kansas City, Mo.

REDUCE YOUR HANDLING COSTS
By the Purchase of Efficient Equipment

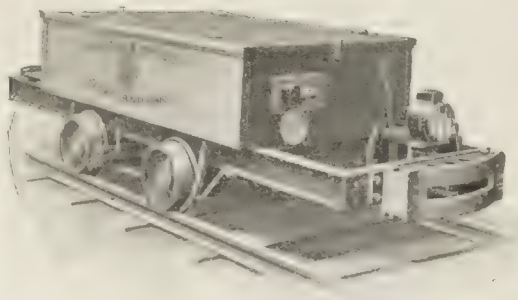


No. 217-E. Side Dump Car Equipped with Motor

ATLAS
High Efficiency
Cars and
Electric Locomotives



No. 126 Double Deck Dryer Car



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.
Dept.
1287 Marquette Road, Cleveland, Ohio

The dryer of the plant has a capacity of 200,000 brick daily, while two kilns have a capacity of 250,000 brick each daily. There is also one down-draft kiln at the plant. The burning capacity is 600,000 to 700,000 daily.

Dr. Duggar says that the concern has received inquiries from all parts of the country about products. The drain tile has already been placed in two small diversification farms in Mobile. These are the L. N. Ward farm at Toulminville, and the Aubrey Boyles place in Mobile.

Pittsburgh Building Valuation Encouraging.

The month just closed was the best November since 1910 in the valuations represented in building permits issued by the bureau of building inspection, Pittsburgh, Pa., the total for the month being 188 permits with a valuation of $777,368. This compares with 228 permits valued at $698,617 in November, 1913; 244 and $694,329 in 1912; 283 and $639,148 in 1911 and 267 and $1,011,890 in 1910. The permits issued last month were for 80 new buildings valued at $673,402; for 28 additions, $28,065 and for 80 alterations, $75,891. Of the permits for new buildings 53 were for brick construction; 9 frame; 16 veneer; 1 steel; 1 cement. The Third Ward led with permits for five brick buildings valued at $249,152, being followed by the Twenty-second Ward with three brick buildings, their value being $141,900.

Considerable interest is being shown in the industry, in the following statistical table, compiled from Dodge Reports, throughout Western Pennsylvania, Ohio and West Virginia, showing comparative figures on building construction for the past five years:

	Contracts Awarded.
January 1, 1914, to date	$125,186,000
Corresponding period, 1913	145,209,000
Corresponding period, 1912	105,163,000
Corresponding period, 1911	112,861,000
Corresponding period, 1910	100,395,000
Corresponding period, 1909	87,301,000

Wisconsin Clay Manufacturers' Convention.

Official announcement has been made of the coming convention of the Wisconsin Clay Manufacturers' Association, which will be held at the St. Charles Hotel, Milwaukee, Wis., February 4 and 5, 1915.

Many topics of interest will be included in the discussion, particularly the matter of cost finding (or cost accounting) on smaller yards, that cannot afford elaborate systems such as are used on yards with larger productions.

Wisconsin has eighty brick and tile manufacturing plants, and it is hoped that a large percentage of these will be present at the convention, the attendance not being limited to members of the association, and a cordial invitation having been issued to everyone interested in burning clay products in the Badger state.

German Embargo Affects Clay Casks.

According to advices received from England, the German embargo on wood is resulting seriously for the makers of clay casks. The English makers of these casks are having difficulty in getting staves for their product, and as a result the prices on casks have been advanced very materially. The shippers of English clays have been hard hit by this advance. Still higher prices are in sight unless the embargo is lifted soon.



THE estimated value of projected building operations throughout the country in 1914 totaled $764,179,925. This was 8.8 per cent below the total of $859,497,232, for one hundred and fifty cities in 1913. The classification of construction by quarters follows:

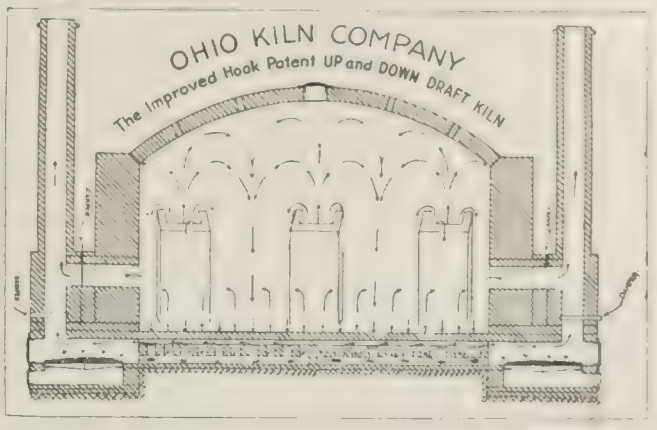
	1914	1913	Change per cent
January, 146 cities	$45,999,862	$55,514,496	D. 17.1
February, 148 cities	51,376,112	62,784,999	D. 18.1
March, 150 cities	85,610,997	83,388,638	I. 2.6
Total 1st quarter	$182,986,971	$201,688,133	D. 9.7
April, 150 cities	$83,364,426	$97,405,999	D. 14.4
May, 146 cities	82,761,751	86,809,693	D. 4.6
June, 150 cities	85,532,913	82,999,953	I. 3.0
Total 2nd quarter	$251,659,090	$267,215,645	D. 5.8
Total 6 months	$434,646,061	$468,903,778	D. 7.5
July, 152 cities	$82,857,507	$78,786,703	I. 5.1
August, 152 cities	62,976,175	65,703,443	D. 4.6
September, 153 cities	53,356,994	79,730,232	D. 33.0
Total 3rd quarter	$199,190,676	$224,220,378	D. 11.1
Total 9 months	$633,836,737	$713,124,156	D. 8.7
October, 152 cities	$52,212,491	$66,141,492	D. 21.0
November, 133 cities	40,130,697	46,519,729	D. 13.7
December, 130 cities	38,000,000	33,711,855	D. 11.2
Total 4th quarter	$130,343,188	$146,373,076	D. 11.2
Total 12 months	764,179,925	859,497,232	D. 8.8

It will be noted that during the last quarter the decrease in per cent has gradually shrunk. In October it was twenty-one per cent; in November the per cent decreased to 13.7 and in December it went as low as 11.2.

Reflecting this gradual improvement in building construction, the drop in material prices has been less precipitous. The downward trend has been checked, indicating that building material commodities throughout the country reflects to some degree the impending change that is about to come over the national market.

Immigration, affecting the labor market, was sharply downward during the first quarter when government statistics were available. Since that time it is to be presumed that this tendency has been much sharper in its decline, owing to the exodus of alien reservists to belligerent countries. The index in building, however, apparently has reached its low ebb, the lowest record in the country since 1901. Banking resources during the period of most acute depression in August were not quite as low as in October of 1907, when there was a financial panic, although they were considerably lower than during the banking crisis of 1903. The year closes with banking resources of the United States safely above normal and bordering upon a state of activity, as far as the business index is concerned. The fact that the banking index is in the classification of plentiful reserves is largely due to the new Federal Reserve Bank Law.

Construction interests have been the victims of a period of reaction lasting approximately six years. Following the



BURNS EVENLY

Just as good ware taken from bottom as top.

No Damaged Ware from Water Smoking

Bottom pieces kept in perfect condition. Try the

Improved Hook System

Don't White-Wash

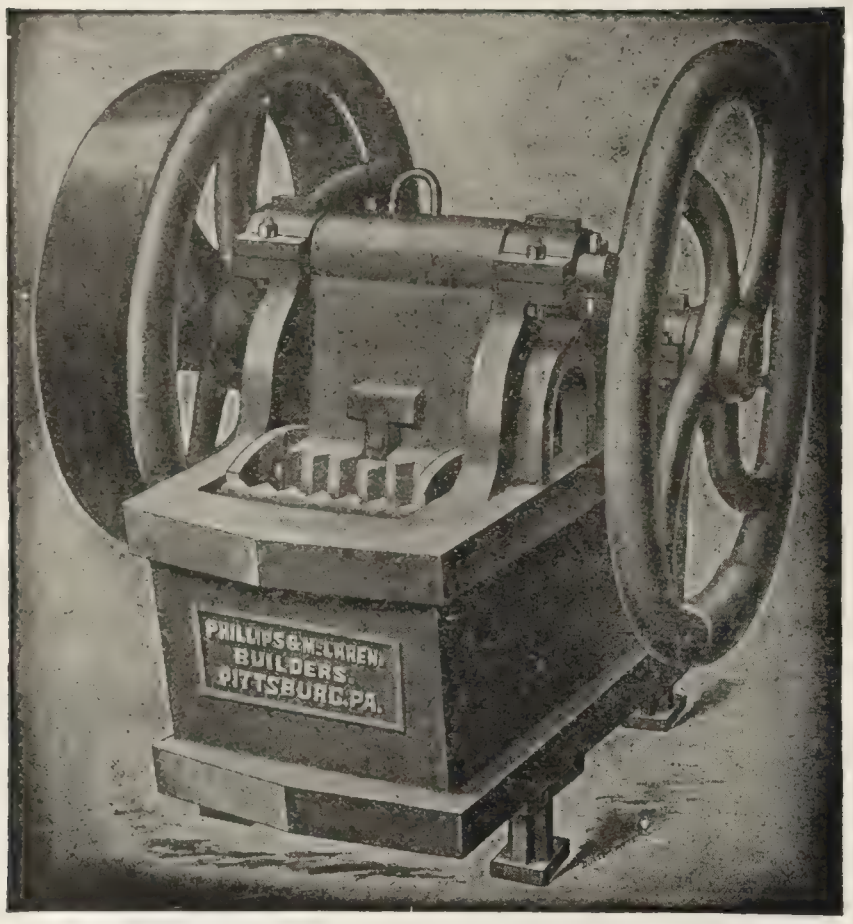
But produces a nice clean uniform burn. Let us prove our claims—you have everything to gain and nothing to lose. Write for information.

OHIO KILN CO., VIGO, O.

Improved Hook Patent Kiln



PHILLIPS & McLAREN CO.
PITTSBURG, PA.
Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers
For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS
When writing for Prices, state kind of Material and Capacity
Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.



SEGER'S COLLECTED WORKS

A MINE OF KNOWLEDGE

Containing Many Nuggets of Valuable Clayworking Experience

We are receiving many orders for our recently-issued volume of Seger's Collected Works. Every clayworker has had an opportunity at some time or other to read some of the articles from the able pen of Hermann August Seger, and his writings have served as a base for progress in clayworking in every civilized country in the world. Seger's Collected Works, as issued by us, contains a collection of the articles that we think to be of the utmost value to our readers, and you could make no more profitable addition to your library shelves than by securing a copy of this work. It is handsomely bound in silk cloth, stamped in gold, and contains 304 pages of the best technical information. The size of the book is 6x9 in. Place your order at once before the edition is exhausted. Price $3.50, postpaid.

Book Department
"BRICK AND CLAY RECORD"
PLYMOUTH COURT, CHICAGO

1907 panic, there was a sharp recovery in banking resources. Prices of materials dropped from high altitudes which prevailed two years prior to that time, until money reached its highest level in November, 1908. From that time down to the middle of 1910, there was reaction due probably to a strenuous political campaign followed by two years of moderate business, until the fall back in 1913 to a state of depression. The year 1914 gave promise of developing a lead equal to that of 1908. It had already reached a level in July within thirty per cent of the 1908 pinnacle when the European War broke out and cast the country into an unprecedented crisis and took away from us much of our cheap labor. Mills began to close and output was restricted. History afforded no guidance and this country was thrown upon its own resources to work its way out of an inigma that never before had confronted it.

While the depression was at its height, this country for the first time in history was conducting its affairs without the medium of a security exchange and without any basis of valuation for securities, save those for government bonds. And yet the depression did not reach the low levels of the short but distressing panic of 1907. Conditions are now ripe for a change for the better. Lake copper electric, pig iron and tin may be expected to be the first contributing factors in building materials to lead the way to more prosperous conditions.

In basic materials, such as brick, steel, cement and lime, the demand for building construction will be the potent influence for or against higher prices, but from an analysis of quotations prevailing throughout the country covering the last twenty years and depending upon the regularity of recurrent cycles of prosperity and depressions, this country is due for a gradual recovery.

Banking interests do not look for any immediate change and are cautioning their clients against expecting boom conditions. The best advise is that there will be a brief recovery between now and July. A reaction may be expected during the summer months with a sharp rise of all building commodities, excluding lumber, but including stocks and other securities in September, which will be carried to exceptional limits of prosperity up to the fall of 1916.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

After a shut-down of several weeks, the plant of the Bessemer Fire Brick Company, Ensley, Ala., is again in operation, employing fifty men.

The manufacture of drain tile for farms has been started in Mobile county, Ala., by the Ballard Brick Company of Calvert. This plant is expected to serve the local demand for drain tile—a demand growing larger daily.

Invading new fields, B. Mifflin Hood of Atlanta, Ga., has returned from a thirty-day trip through the west and northwest in quest of business. "Prosperity is there," said he on his return. "I got business everywhere I stopped. It is the first time the products of a southern brick plant have been sold in the north and west."

Work has been started on the rebuilding of the plant

of the Southern Sewer Pipe Company, North Birmingham, Ala., which was destroyed by fire recently. The demand for this company's product is very good just now and fortunately it has accumulated a sufficiently large stock to fill orders until operations can again be resumed.

CALIFORNIA

The city trustees of El Centro, Cal., are considering plans for a sewer system at that place.

N. Clark and Son, San Francisco brick manufacturers, have secured the contract for the matt-glazed architectural terra cotta for the Christian Science Church on Haight Street, San Francisco.

Joseph P. Duffy of Stockton, Cal., third vice-president of the International Brick Layers' Union of America, who has just returned from a meeting of the executive committee at Indianapolis, Ind., states that the advisability of starting a large brick manufacturing plant to cost about $100,000 in California, is under consideration by the general executive board of the union.

Brick manufacturers in the San Francisco district are increasing their shipments to outlying points. The steamer "Loop," which sailed recently for the north, carried 40,000 brick for Artoria, Ore., and 5,000 to Westport in the same state. There is a probability of very large shipments early next year to Papeete in French Samoa for use in rebuilding that town, which was largely destroyed a couple of months ago when it was bombarded by German warships. The old town was built largely of sheet iron; but plans are now being made for rebuilding with brick. San Francisco is the only coast port in direct communication with Papeete, and figures are now being secured in that city.

Frank Craycroft, one of the leading brick manufacturers of the San Joaquin Valley and head of the Graycroft-Herrold Brick Company of Fresno, Cal., was shot in the mouth and dangerously wounded on December 10 by W. Y. Johnson, a brick contractor of Fresno. T. B. Craycroft, an aged uncle of Frank Craycroft, who attempted to interfere and save his nephew, was also shot and seriously injured. Johnson shot and killed himself a few minutes later. Both of the Craycrofts are still alive, and late reports indicate that they will recover, although Frank Craycroft is still in a critical condition. The shooting occurred in the office of the Craycroft-Herrold Brick Company at Fresno as a result of an attachment levied on Mr. Johnson's property to secure payment for brick supplied by that company.

CONNECTICUT.

The brick plant of John Carbo, Berlin, Conn., has been partly destroyed by fire. The damage is estimated at $2,000.

FLORIDA

Lake Lucerne, one of the beauty spots of Orlando, Fla., is now surrounded by a brick highway. The loose brick wall formerly belting the lake has been torn down and the brick used in paving the new drive.

Lee Miller of Ocala, Fla., has bought the brick kilns and other plant property of the Roess Lumber Company, at Whitney, Sumter county, and will soon begin operations. The property includes excellent clay beds, and the equipment is modern. The capacity of the plant will be increased from 25,000 to 50,000 per day.

ILLINOIS

The new silica brick plant that is being erected at Danville, Ill., by the Danville Refractories Company, is rapidly

Reasons Why You Should Use Gandy Stitched Cotton Duck Belting



YOUR choice of a belt depends on two considerations — service, first; and price, second. You are bound to buy where you are sure of getting the greatest amount of Service for the least outlay of money.

On these two considerations, "The Gandy Belt" offers you the following:

Proof of service under the severest conditions of use (dust, dirt, moisture, exposure to acid fumes, etc.). This proof in the form of letters received from satisfied users. Thousands of Gandy belts are now operating satisfactorily in all lines of industry. Names of users furnished on application.

Price: The initial cost of "The Gandy Belt" is only about one-third that of leather belting and much less than that of rubber belting, while it does the work equally as well.

Whenever you are interested we will send you samples and full information.

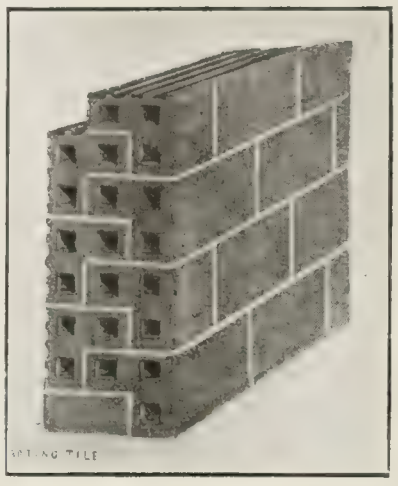
The Gandy Belting Company

732 W. Pratt Street
Baltimore, Md.

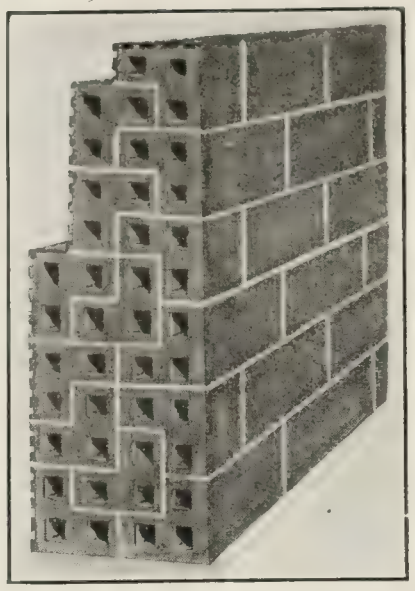
New York Office, 36 Warren Street

"Samson Interlocking Tile"

Patented



9-inch Wall.



12-inch Wall Reduced to 9 inches.

The 20th Century Building Material

The most modern material in hollow wall construction.

Strong enough for the million dollar sky-scraper and yet cheap enough for the workingman's home.

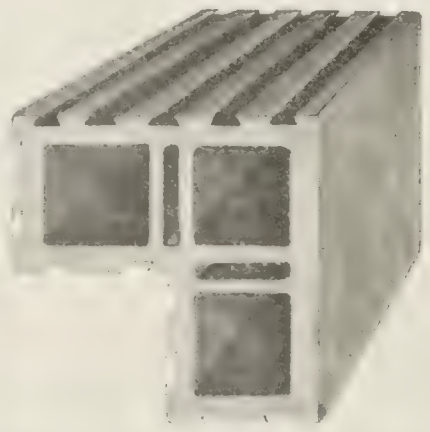
Recommended by architects, contractors and all municipalities.

When made with one smooth face, it may be built to show either smooth or scored face.

The great armies of the world are now employed in destruction; be prepared to supply the material for the second great army of constructors.

This second army shall be the largest the world has ever seen.

Write to-day and get a license to manufacture SAMSON TILE. License granted to reliable clay products manufacturers.



W. W. Smith

Shallow Lake

Ont., Can.

nearing completion and it is expected that it will be in full operation by March 1.

E. H. Gaskill and George Parker have purchased the Schroeppe brick yard at Collinsville, Ill. Both men are experienced brickmakers and it is expected that they will soon have the plant operating to full capacity.

Because of a curtailment in the water supply, the Albion Shale Brick Company, Albion, Ill., recently shut down its plant for ten days. This is only one of a number of times during the past few months when low water in the reservoirs has closed up the plant. During these periods, however, extensive improvements have been made to secure a greater water storage capacity with a view of minimizing the number of shut-downs in the future.

The Marion Brick Works, Montezuma, Ind., which has been closed for the past two weeks undergoing repairs, is about to resume operations.

Mr. Durst of the Kokomo Brick Company, Kokomo, Ind., has taken an option on thirty-eight acres of clay land near Decatur, Ind., on which it is planned to erect a brick plant.

H. H. Titsworth, of Chicago, president of the Clay Products Company of Brazil, Ind., has notified the Society for Organized Charity that he will give a carload of coal to be distributed among the poor and needy.

C. H. Worchester, receiver of the Marion Brick Works at Montezuma, Ind., has made his final report in the Circuit Court. The report shows that twenty-three per cent was paid on unsecured claims and that secured claims were paid in full. The court ordered notice given of the filing of the report and approved many deeds and other papers pertaining to the receivership. The plant, it is stated, will open in the Spring and give employment to about one hundred men.

Following the convention of the face-brick manufacturers at French Lick, a party of manufacturers from the East visited the Evansville, Ind., plant of the Standard Brick Company, considered one of the best plants in that section. Included in the party were J. Parker B. Fiske, of New York; Edward M. Taylor, general sales manager for Fiske & Company, Inc.; Francis T. Owens, manager of the Ridgway Brick Company, Ridgway, Pa., and T. W. Pierce, of Boston, Mass. The visitors were conducted through the plant by H. C. Kleymeyer.

IOWA

The Reliance Brick and Tile Company's plant at Belle Plaine, Iowa, consisting of buildings, machinery and seventy-one acres of land, was sold recently to W. J. Guinn for $106,352.

By the retirement of F. A.Stephenson, formerly owner of the Mason City Brick and Tile Company, Mason City, Ia., F. E. Keeler becomes the owner of all of the stock in that company. Mr. Stephenson, who has been engaged in the manufacture of clay wares for over thirty years, leaves behind him an enviable record for constructive work in the city and its clayworking industry.

F. E. Keeler and B. C. Keeler of Mason City, Ia., have purchased a controlling interest in the American Brick and Tile Company, at that point. A change in management of the above company will be made at once. The officers of the new company are F. E. Keeler, president; B. C. Keeler, secretary and treasurer, and L. R. Bailey, assistant secretary. Besides being president of the Mason City Brick and Tile Company, the new president holds many other positions of prominence in local industries, among which is the vice-

presidency of the First National Bank of Mason City. Mr. Keeler is also president of the Iowa Clay Products Manufacturers' Association.

KANSAS

Summit street, Arkansas City, Kan., is to be repaved in the near future for about a mile in length. Brick will be used, laid on a concrete base.

The plant of the Fredonia Brick Company, Fredonia, Kan., has been closed down for the winter while the machinery is undergoing a complete overhauling, and new kilns are built.

KENTUCKY

The builders' supply business, which was formerly conducted under the name of Owen Tyler, is being carried on as the Tyler Building Supply Company, with Isaac Tyler, brother of Owen Tyler, as president. Owen Tyler has left for Lima, Peru, to reside, where he will represent certain American business interests.

The Court of Appeals, the final court in Kentucky, has held that the Workingmen's Compensation Act is unconstitutional. The law was to have gone into effect, as to its compensatory provisions, on the first of the year. It had been sustained by the lower courts, and it was thought that the higher court would hold it valid. The court was divided, the majority ruling an effective workmen's compensation law would be impossible. The decision turned on the contention that the law would deprive employes of certain rights to recover for injuries.

Cold weather has overtaken the brick manufacturers of Kentucky, and it is the exceptional plant that is in operation at this time. Some of the manufacturers who are firing still, although two or three days a week, is about the best time anyone is making. Deliveries are still being made to jobs which were underway before cold weather came, and stocks of brick are sufficient to take care of any business that can reasonably be foreseen until operations are resumed. The dull period is being taken advantage of in most yards in the overhauling of plants and machines.

With the end of the year the Louisville brick men have been taking stock and find that, in spite of the depression which they have suffered in common with the rest of the business world, they have handled a large volume of brick. A considerable amount of hollow tile has also been used. Allowing $250,000 for the building permits during December, a figure which the city building inspector, William O'Sullivan, has stated is about normal, the total expenditure for buildings in Louisville during 1914 amounted to $4,458,050, a sum which compares favorably with $4,054,190 for the calendar year of 1913. This means an increase of $403,000 for this year, a report that reflects much credit on the soundness of the city's condition and that gives a great deal of encouragement to the building trades. The character of building this year has been about the same as in previous years, with a large number of small houses of brick. The brick manufacturers feel that they have had their share of the business.

MAINE

The North Iowa Brick and Tile Company, Augusta, Me., has filed notice with the secretary of state of a reduction in the membership of the board of directors from eight to seven.

MARYLAND.

The Dunn Wire-Cut Lug Brick Company, Conneaut, Ohio, has just licensed the Westport Paving Brick Com-

SACKETT 1685 ELSTON AVE CHICAGO

A FACT

SACKETT 1685 ELSTON AVE CHICAGO

We have dealt with the clayworkers for years.

THE REASON

Our goods have made an unqualified success in their hands.

A STATEMENT

We make this the opening announcement to reach every clayworker in the UNITED STATES and CANADA.

WE OFFER

Portable gas engine pumps.
Rocker side dump cars.
Friction hoists.
Conveyors.
Elevators.
Revolving screens.
Dryer cars.
Portable yard and kiln track.
Switches.
Turntables.
Ideal car movers.
Picks.
Shovels.
Steel wheelbarrows.
Jacks.

Ask for Catalogues Nos. 31-32, giving complete list and description of clay plant equipment.

H. B. Sackett Screen & Chute Co.

1681 ELSTON AVENUE

CHICAGO

SACKETT 1685 ELSTON AVE CHICAGO

Watch for the shield

SACKETT 1685 ELSTON AVE CHICAGO



FIRE PROTECTION

Fire insurance seldom returns more than half the real fire loss.

Water in quantities, when and where needed, prevents spreading of small fires—the producers of real fire loss.

EAGLE TOWERS—TANKS

DECREASE

insurance rates.
shut-down probabilities.

INCREASE

security.
efficiency.

In addition to regular work of feeding boilers and pug mill.

THE EAGLE TANK CO.
CHICAGO :: :: ILLINOIS

pany of Baltimore, Md., whose plant is at Westport, a suburb of Baltimore, to manufacture Dunn wire-cut lug brick.

MICHIGAN.

The Ajax Brick Company, Detroit, Mich., has increased its capital stock from $150,000 to $200,000.

The Southern Michigan Brick Company, Kalamazoo, Mich., has increased its capital stock from $40,000 to $50,000 and with the additional capital intends making a number of necessary improvements.

A small fire was discovered a few weeks ago at the plant of the Saginaw Paving Brick Company, Saginaw, Mich. The blaze was quickly extinguished, only a slight damage being incurred.

At a conference of bricklayers and masons held recently at Jackson, Mich., a decision was reached that, on and after June 1, 1915, the bricklayers will refuse to lay prison-made brick except on state institutions. President Rodman Irwin and Secretary-Treasurer William Kean of the bricklayers gave out the statement that they considered the action taken as being fair and that the bricklayers would willingly lay brick made in Jackson prison on any Michigan state institution, but would not handle it for private contractors after June 1.

Two well known Detroit brick men have been appointed to political offices by Mayor Oscar B. Marx. John Haggerty, brick manufacturer, with offices in the Dime Bank Building, has been appointed a member of the building commission to succeed Alanson A. Moore. Mr. Haggerty is well known throughout the state, and is a member of the Republican state central committee. He has been a member of the county roads commission for several years. Charles F. Clippert, vice-president and general manager of the George H. Clippert & Brother Brick Company, has been appointed a member of the fire commission. He has never been particularly active in politics, and it was only after constant persuasion by the mayor that Mr. Clippert decided to accept the appointment.

MINNESOTA

The Zumbrota Clay Manufacturing Company, Zumbrota, Minn., is planning to enlarge the capacity of its plant.

MISSOURI.

Harrisonville, Mo., has let a contract for paving six thousand square yards of roadway with brick which will be supplied by the Coffeyville Brick and Tile Company.

John W. Gannet, secretary of the Mitchell Clay Manufacturing Company, St. Louis, Mo., suffered a fractured ankle recently when the automobile he was driving crashed into a wagon near Manchester and Sublette Avenues, St. Louis. Smoke, fog and a slippery pavement are said to be the cause of the accident.

The brick work on the new Muehlbach Hotel, Kansas City, has been completed. The face brick were supplied by the Hydraulic-Press Brick Company, about four hundred thousand being used. The building is eleven stories high and considerable terra cotta has been used in the construction and decoration of the three upper stories.

The prospects for increased paving activity in Kansas City in the near future are very bright. For some time the local newspapers have been agitating new pavement for many of the streets but so far the city has hesitated. However, there has recently been placed before the city council several proposals to pave long stretches of roadway and these will be

acted upon very shortly and probably passed. This will mean more business for local paving brick concerns.

The Hydraulic-Press Brick Company is dismantling its yard at Guinotte and Salisbury Avenues, Kansas City, removing the machine shop to the Diamond yards in that city and the machinery and other equipment to St. Louis. The old yard occupies about four city blocks. It was established by the Calorific Clay Company, prior to 1886. The Hydraulic-Press Brick Company took over the plant in 1888. It has used surface clay from Fairdale, Kan. The Diamond plant, of which J. B. Broering is superintendent, uses shale, as do the company's other plants.

NEBRASKA.

The Smith Brick Company, No. 3101 Lake Street, Omaha, Neb., has suffered a loss of about $30,000 from fire, part of which is covered by insurance.

NEW JERSEY

L. B. Eskeson, vice-president of the New Jersey Terra Cotta Company of Perth Amboy, N. J., and director of the Mataway Tile Company, died during the early part of December. Mr. Eskeson was one of the best known men in the terra cotta industry.

NEW MEXICO

At a recent meeting of the board of directors, the Gallup Fire Brick Company, Albuquerque, N. M., chose T. A. Christian of Olive Hill, Ky., to become manager of the company. This concern is said to control the finest clay deposits in the southwest, and finds a market for its product as far west as California and as far east as Kansas.

NEW YORK.

The Ithaca Brick Yards, Ithaca, N. Y., of which I. K. Bernstein is proprietor, has finished what it considers a very successful season, during which nearly the entire output of the plant was contracted for. The plant has been closed to take care of improvements which will provide a larger capacity.

The brickmakers located in the neighborhood of Haverstraw, N. Y., have introduced a novel method of marketing paving brick. The brick men propose to pave a certain street in the village with brick as an experiment, with the understanding that if the pavement is in good condition at the end of six months, the village is to pay the actual cost of the work of putting down the pavement. The confidence these clayworkers have in their product is gratifying. There is no doubt but that at the end of six months, the village will be thoroughly convinced of the merits of brick as a paving material.

NORTH CAROLINA

The new plant of the Isenhour and Sons Brick Company, near Whitney, N. C., has begun full capacity operations. The plant has a capacity of about 20,000 dry-pressed brick daily.

OHIO

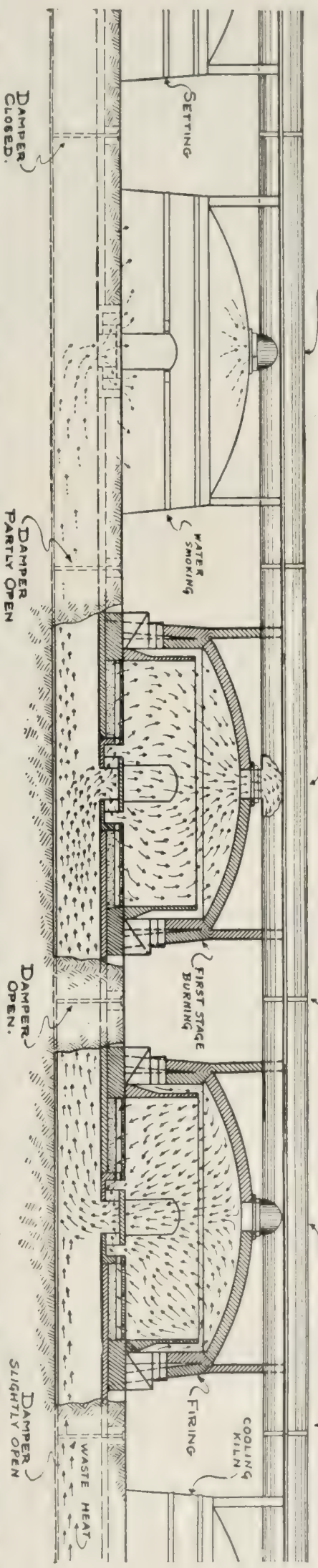
The National Paving Brick Company has moved its offices from Columbus to Zanesville, Ohio.

The Board of Trade, Canfield, Ohio, has about completed negotiations for a tile plant to be located in that town shortly.

The Ohio Pressed Brick Company, Zanesville, Ohio, has taken over the plant of the Ransbottom Brothers Pottery Company, Roseville, Ohio, one of the largest potteries in Ohio. New machinery is to be installed for the manufacture of red roofing tile.

THE SCHAFFER SEMI-CONTINUOUS KILN SYSTEM

(Patents Pending)



The Schaffer Semi-Continuous Kiln System consists of an overhead duct and an underground tunnel arranged in such a manner as to make the operation of the round down draft kilns continuous.

It gives the same fuel saving as the regular continuous kiln, but is much more simple to operate.

It produces a much higher class ware than is produced in either the continuous or periodic kilns.

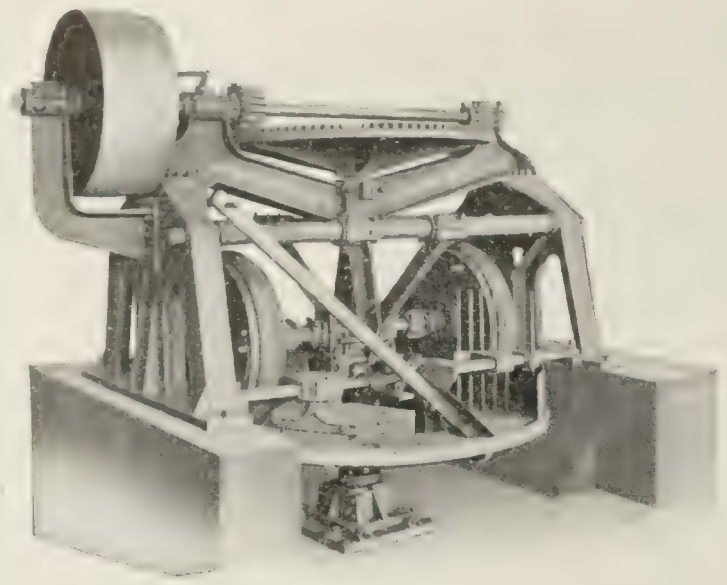
SEECO SYSTEMS applied to your round down draft kilns will save you $1,000 per year on each kiln by taking your heated gases to the next kiln ahead, instead of out to the stack.

This is only one point of advantage.

There are many others, if you will ask us to explain.

Seeco Systems Secure Success in Old Plants as well as new.

THE SCHAFFER ENGINEERING & EQUIPMENT CO. (Incorporated), TIFFIN, OHIO



Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

The weather for the past three or four weeks, marked by temperatures ranging to points below zero, accompanied by snow, sleet and rain, has put a stop to most of the building activity in and around Cincinnati. There has been virtually no new orders, and deliveries on jobs now under construction have been stopped on account of the impossibility of continuing outdoor work. Local plants are closed down, with reserves on hand sufficient to last until building opens up in the spring. As to 1914, there is no denying that it was a very poor year for most of the brick and tile manufacturers in Cincinnati. The carpenters' strike, which took the heart out of the building season, hampered the business of the brick, tile and terra cotta men, as a matter of course, although in occasional instances it had the effect of causing owners to switch from concrete or frame to brick, as requiring less carpentry work. The year as a whole, however, was below normal. In spite of this fact, attested by the experience of all branches of the building trades, the statistics of the building commissioner's office show that, judged by the number of permits issued and the estimated value of the structures covered by them, the year was much better than 1913, and was, in fact, the fourth best in ten years. Up to December 26, the cost of buildings authorized for the year was $8,844,401, as against $8,348,432 for the entire year of 1913—an excess of $495,969 over the latter year. The number of permits for 1914 was 13,250, as against 12,558 for 1913. The only explanation of slow business, in the light of these statistics, is that much of the work authorized was small repair work, while some large permits, for buildings which have not yet been started, also helped to swell the figures, but did nothing to create more work. Prospects for 1915 are generally regarded as good, for the same reason, that is, a good deal of work planned for 1914 was not done, but will be begun and finished this year. Also, optimism seems to be the general rule among numerous lines of industry which go to make up Cincinnati's business and working population, and as there are plenty of indications of increasing activity, especially in the export trade, there is every reason to believe the clay-working industry will share in the coming prosperity.

ONTARIO

The West Lake Brick and Products Company, Ltd., Wellington, Ontario, Can., has been incorporated with a capital stock of $250,000 by N. F. Hoffman and Grover Lauth, Buffalo, N. Y., Hugh A. Rose and others, to manufacture brick and other products.

Four laborers were killed recently at the plant of the Ontario National Brick Company, Cooksville, Ont., when the scaffolding on which they were working collapsed without warning. There were five men on the scaffold working on the water tank. The fifth man saved himself from injury by clinging to the rope supporting the scaffold, and sliding to safety.

PENNSYLVANIA.

The Diamond Brick Company, Wilkes-Barre, Pa., and other investors are interested in the establishment of a brick plant at Hazleton, Pa., which will employ a force of about fifty men.

The fifth annual banquet of the Pittburgh Builders' Exchange, Pittsburgh, Pa., was held Thursday evening, December 24, at the Fort Pitt Hotel. There was about four hundred people in attendance.

After paying the usual dividends on common and preferred stock, the Harbison-Walker Refractories Company, Pittsburgh, Pa., for the year which ended September 30, had a surplus of $188,987 remaining, which is a good showing.

The Kane Brick Company, Kane, Pa., has received the largest order in its history. The order, which came through Fiske and Company of Boston, calls for the delivery of about 1,000,000 brick. The plant expects to run at full capacity for four months to fill this order.

Mrs. Margaret Armstrong, No. 102 Philadelphia Avenue, Pittston, Pa., and others, are contemplating the erection of a brick plant should they be able to find a sufficient market for their white clay to interest parties in helping raise the necessary money to finance the project.

A steady increase in business during recent months has forced the Milton Brick Company, of Milton, Pa., to erect an addition to their present plant. The plans for the new addition have been prepared, and Thomas Wilson, manager of the company, is at present receiving bids for the work.

RHODE ISLAND.

The Barrington Steam Brick Company of Barrington, R. I., following its usual custom, has discontinued operations at its plant and will not resume operations until spring. Enough employes have been retained to care for the shipping operations.

SOUTH CAROLINA

The Charlotte Brick Company's plant at Fort Mill, S. C., has resumed the manufacture of brick after being closed down for nearly two months. The plant employs about one hundred and twenty-five men.

The plant of the Charlotte Brick Company, Fort Mill, S. C., has resumed operations after having been shut down for about two months. This plant employes about one hundred and twenty-five men.

TENNESSEE

The Holston Tile Company, Rogersville, Tenn., has been incorporated with a capital stock of $35,000 to manufacture tile.

H. W. Johnson, secretary-treasurer of the Home Ice and Coal Company, Johnson City, Tenn., acting in the interest of W. B. Townsend and associates, has taken an option on twenty-five acres of land near that city upon which it is planned to erect a brick plant of large capacity equipped with the most modern machinery.

By far the largest order for high-grade fire brick ever placed in Chattanooga, Tenn., was filed recently by the Chattanooga Gas and Coal Products Company with the Southern Refractories Company, of Mission Ridge, for all the fire brick and special shape work required in the gas company's new coke ovens in Alton Park, near Chattanooga. An extra force was started at once by the refractories company on the order.

TEXAS.

The Thurber Brick Company, Thurber, Texas, has reopened its plant which has been idle for more than a year. This plant, which manufactures a vertical fibre paver, will soon begin to make building brick and will use natural gas from local fields for fuel.

WASHINGTON

The American Brick, Lime and Sewer Pipe Company, Spokane, Wash., has been awarded a contract calling for the delivery of about three million brick and about $18,000 worth of terra cotta for the St. Michael's School building to be erected in that city.

The architectural terra cotta for the new Liberty Theatre at Spokane, Wash., is being supplied by the Denny-Renton Clay and Coal Company of Seattle. This will in-

An Appropriate Resolution

For 1915 would be to Install

The Underwood Producer Gas Burning System

Patented

This resolution carried into execution means a more profitable year than any that has gone before.

Why?

Because by this system alone do you get genuine burning economy.

The Manufacturers Equipment Company

Everything for the Clay Worker

Dayton, Ohio, U. S. A.

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press

Auger Brick Machines

Down Delivery Tile Mills

Oil Burning Equipment

Crude Oil Engines

Piano Wire Screens

Dry and Wet Pans

Soft Clay Brick Machines

Pug Mills

Wet and Dry Clay Disintegrators

Smooth and Conical Roll Crushers

Wood Moulds

Trucks and Barrows

Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.

20 W. Jackson Blvd. Chicago, Ill.

clude a terra cotta replica of the Bertholdi statue of "Liberty Enlightening the World."

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

The annual convention of the United States Potters' Association which was held at the Raleigh Hotel, Washington, D. C., closed the evening of December 10 with a banquet at which more than one hundred members and guests were present. Among the guests of the potters were Senators Boies Penrose of Pennsylvania, Theodore E. Burton of Ohio and Governor-elect Frank B. Willis of Ohio. The sessions on December 9 were devoted to a general discussion of trade conditions.

The following officers were elected: P. C. G. Gosser of the Pope-Gosser China Company, Coshocton, Ohio; vice-presidents, T. A. McNichol, F. McNichol Pottery Company, and C. C. Ashbaugh of the West End Pottery Company, both of East Liverpool, Ohio; secretary-treasurer, Chalmers F. Goodwin, East Liverpool, chairman; George C. Thompson, East Liverpool, F. A. Sebring, Sebring, Ohio; E. M. Knowles, W. E. Wells, W. S. George, Patrick McNichol and Charles H. Cook.

The Crescent Pottery Fire Brigade, an organization among the employes of the Crescent Pottery Company, Trenton, N. J., for the protection of the plant from fire, held its second annual dinner a few weeks ago at the Hotel Manze, Trenton, N. J. The guests of the brigade included many of the officers of the Trenton pottery companies.

The Wheeling Potteries Company, Tiltonville, Ohio, has been enjoying an exceptionally busy season during the past year. The plant has been working to capacity and in order to fill certain orders, it has been frequently necessary to run a night shift. The plant closed recently for the holidays but has reopened and expects to continue full capacity operations.

The T. A. McNichol Company, East Liverpool, Ohio reports prospects for business during 1915 as being very promising. This company has sufficient advance orders to insure eight months' steady operation.

The Diehl Pottery, near Rock Hill, Pa., has placed the contract for the erection of a new kiln at its plant.

Lumbermen Begin War on Substitutes.

At a conference recently held at the Hotel La Salle in Chicago, a few weeks ago, one hundred and fifty lumbermen, representing associations from as many cities and towns, laid plans for an extensive campaign against interests marketing more permanent building materials, including brick, cement and steel. The lumbermen have become highly incensed against the claims of said interests that lumber is a flimsy and dangerous material to use in building and are preparing to refute these claims.

It is a case of the ogre having slept a trifle late, while the hero has been busy carrying away the princess. The ogre, on waking, discovers his loss and in a boiling rage has picked up his club and started pursuit to regain his treasure.

Freight Tariffs and Troubles

(Continued from page 61.)

order of November 3, 1914, by changing the date from February 1, 1915, to January 1, 1915, is vacated and set aside, leaving in full force and effect the said order of November 3, 1914."

The following reparations of interest to the industry have been allowed since our last issue:

Hydraulic Brick Company vs. the Seaboard Air Line Railway. A refund of $1.80 was allowed because of an unreasonable rate applied on brick shipped from Waterloo, Va., to Fitzgerald, Ga.

Salisbury Brick and Tile Company vs. the Southern Railway Company. A refund of $71.40 was allowed because of an unreasonable rate charged on four shipments of brick forwarded from Salisbury, N. C., to Danville, Va., during October, 1913.

S. S. Kimbell Brick Company vs. the Baltimore and Ohio Railroad Company. A refund of $10.00 was allowed on account of drayage expense incurred due to the misrouting of one carload of building brick shipped from Groveport, O., on July 14, 1914, to Chicago, Ill.

National Fire Proofing Company vs. the Hocking Valley Railway Company. A refund of $29.87 was allowed on account of an unreasonable rate applied on two carloads of hollow building tile from Haydenville, Ohio, to Orland and Mongo, Ind., on February 6, 1914.

The National Tile Company vs. the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company. A refund of $7.62 was allowed on account of the unreasonable rate applied on four carloads of encaustic tile shipped from Anderson, Ind., to St. Paul, Minn., on June 27, 1913.

National Fire Proofing Company vs. the Hocking Valley Railway Company et al. A refund of $3.74 was allowed because of the rate applied on one carload of building tile shipped from Haydenville, Ohio to Blanchardsville, Wis., on August 19, 1913.

The Trumbull Brick Company vs. the Erie Railroad Company. A refund of $9.07 was allowed on account of the unreasonable rate charged on two carloads of building blocks shipped from Leavittsburgh, Ohio, on April 18, and May 12, 1913, to Nashua, Pa.

J. W. Paxson Company vs. the Pennsylvania Railroad Company et al. A refund of $7.75 was allowed because of an unreasonable rate applied on twenty-five barrels of fire brick forwarded on April 4, 1914 from Lock Haven, Pa., to Irvington, N. J.

Changes in Freight Rates.

The following changes in freight rates affecting clay products have become effective since our last issue:

From Eastern Points.

From Alburtis and Mertztown, Pa., clay, to Rutland, Vt., $2.80 per net ton.

From Auburn and Hamburg, Pa., brick, to Glens Falls and Hudson Falls, N. Y., $2.70 per net ton.

From Buckeystown and Frederick, Md., brick, to Owings Mills, Md., $1.50 per net ton.

From Cliffwood and Matawan, N. J., common brick, to Kings Bridge, N. Y., $2.00 per net ton.

From Corning, N. Y., flat, flooring or roofing brick, to Middletown and New Berlin, N. Y., $1.75 per net ton.

The Sturtevant Way of Drying Is to Treat Each Case Individually

The Sturtevant Mechanical Draft System is not a *"ready made"* system.

The Sturtevant System is measured, made and fitted to the requirements of *your* particular clay and *your* particular product.

Sturtevant engineers study your case individually and they recommend accordingly.

But Back of the Sturtevant System is a Principle

The Sturtevant System was scientifically worked out—tested—and then—proved in practice.

Years of actual use under the most trying conditions have proven the accuracy of the Sturtevant fundamentals.

Let us Apply the Sturtevant System to Your Case

Ask us to prove how the Sturtevant System speeds up a plant—cuts coal bills—dries your product more uniformly—makes water smoking unnecessary.

A request from you will bring Bulletin No. 202-S. with all the facts.

B. F. Sturtevant Company

Hyde Park, Boston, Mass.

And All Principal Cities of the World

From Corning, N. Y., paving brick, flat, flooring or roofing brick, to Kenwood, N. Y., $1.50 per net ton; to New Berlin, N. Y., $1.75 per net ton.

From Drummond and Shawmut, Pa., clay products, to Kingston and Walton, N. Y., $2.30 per net ton.

From Frederick, Md., brick, to Green Spring, W. Va., $1.50 per net ton.

From Langdon and Terra Cotta, D. C., common brick, to Annapolis, Md., $1.25 per net ton.

From Langdon and Terra Cotta, D. C., burned clay fireproofing, to Annapolis, Md., $1.50 per net ton.

From Mt. Holly Springs, Mt. Stewart and Toland, Pa., clay, to Gibbsboro, N. J., $2.50 per net ton.

From Mt. Holly Springs, Pa., clay, to Newport, Del., $2.00 per net ton; to Delawanna, N. J., $2.00 per net ton.

From Middle West Points.

From Cincinnati, Ohio, Evansville Jeffersonville, Madison, and New Albany, Ind., and Louisville, Ky., brick and articles taking the same rate to Chicago, Ill., $1.55 per net ton; to Milwaukee, Wis., and rate points, $1.95 per net ton.

From Duluth, Minn., brick and hollow building tile, to Beaudette, Pitt, Graceton, Cedar Spur, Williams, Roosevelt, Warroad and Longworth, Minn., 12c per cwt.

From Kankakee, Ill., brick and articles taking same rate, to Chicago, Ill., 50c per net ton.

From Mackinaw City, Mich., brick (except bath and enameled) and articles taking same rates, to Fargo and Wahpeton, N. D., 19c per cwt.

From Manistique, Mich., brick (except bath and enameled) and articles taking same rates, to Fargo and Wahpeton, N. D., 18c per cwt.

From Western Points.

From Arcadia, Kan., Brownington, Mo., Cherryvale, Columbus, Fredonia, Ft. Scott and Girard, Kan., Humansville and Liberal, Mo., Mound Valley, Neodesha, Pittsburg and Weir, Kan., and Rich Hill, Mo., 7½c per cwt.

From Beatrice, Omaha, South Bend and South Omaha, Neb., brick (except bath and enameled), including hollow building tile and clay, to Lincoln, Neb., 3c per cwt.

From Fairbury, Neb., brick (except bath and enameled), including hollow building tile and clay, to Lincoln, Neb., 4c per cwt.

From Ft. Dodge, Ia., brick, to Omaha, Neb., 6c per cwt.

From Hebron, Neb., brick (except bath and enameled), including hollow building tile and clay, to Lincoln, Neb., 4½c per cwt.

From Lincoln, Neb., brick (except bath and enameled), including hollow building tile and clay, to Fairbury, Neb., 3½c per cwt.

From Nelson, Neb., brick (except bath and enameled), including hollow building tile and clay, to Lincoln, Neb., 5c per cwt.

From New Albany, Kan., vitrified brick, to Omaha, Neb., 8½c per cwt.

From Peublo, Colo., brick, other than common, to Amity, Colo., 13c per cwt., to Bristol, Col., 14c per cwt.; to Rocky Ford, Colo., 5c per cwt.; to Swink, Colo., 6c per cwt.; to La Junta, Colo., 7c per cwt. and to Lamar, Colo., 10c per cwt.

From Southern Points.

From Buena Vista, Va., fire brick, to Belle, Boomer, Cannelton, Cedar Grove, Dana, Dickenson, Furnace, Glen Ferris, Gauley, Brieg, Bridge, Hugeston, London, Longacre, Malden, Monarch, Shrewsbury, Smithers and Witcher, W. Va., $2.60 per net ton.

From Marlboro, S. C., common brick, to Aberdeen, N. C., $2.25 per M.; to Roslin, McMillan, St. Paul, Roziers, Woodmore, Lumberton, North Lumberton, Dundee, Tar Heel, Berwick and Elizabeth, N. C., $1.00 per M.

DRY YOUR BRICK WITH EXHAUST STEAM

We Prove Our Claims

By short extracts from letters received from highly pleased customers:

"We are proud of our drier and do with **exhaust steam** all that you claimed."
BRAZIL FACE BRICK CO., Brazil, Ind.

"We have had no difficulty of any kind, **no repairs**, and results even better than you promised, using **exhaust steam.**"
ROESKE BROS., Michigan City, Ind.

"Used eight years without a moment's trouble—**exhaust steam.**"
A. G. KAHN BRICK CO., Selma, Ala.

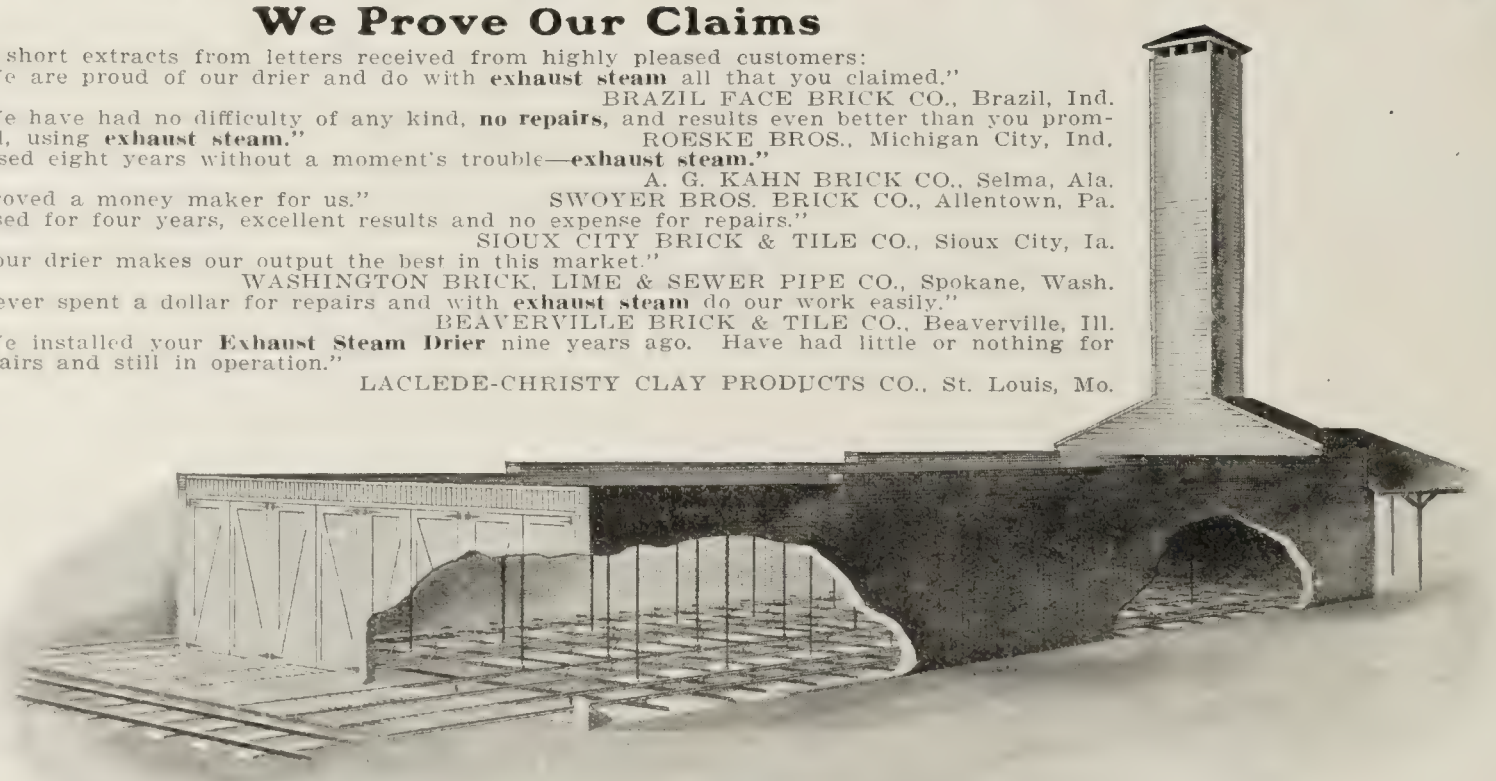
"Proved a money maker for us." SWOYER BROS. BRICK CO., Allentown, Pa.

"Used for four years, excellent results and no expense for repairs."
SIOUX CITY BRICK & TILE CO., Sioux City, Ia.

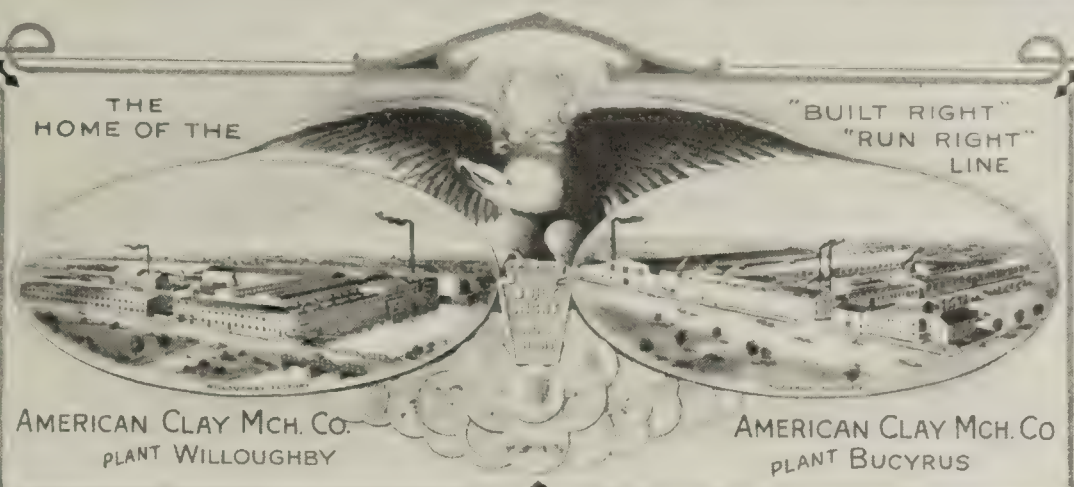
"Your drier makes our output the best in this market."
WASHINGTON BRICK, LIME & SEWER PIPE CO., Spokane, Wash.

"Never spent a dollar for repairs and with **exhaust steam** do our work easily."
BEAVERVILLE BRICK & TILE CO., Beaverville, Ill.

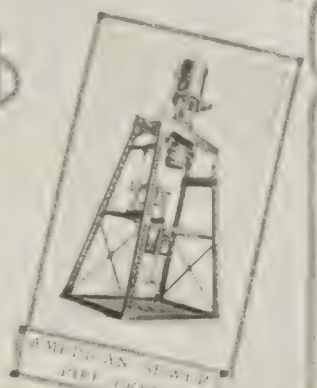
"We installed your **Exhaust Steam Drier** nine years ago. Have had little or nothing for repairs and still in operation."
LACLEDE-CHRISTY CLAY PRODUCTS CO., St. Louis, Mo.

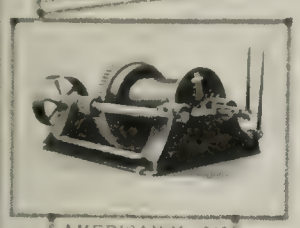


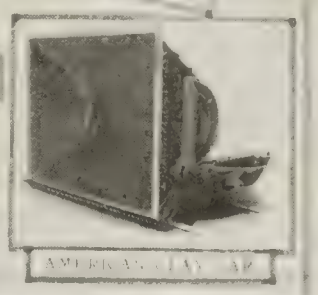
The National Dry Kiln Co., 1118 East Maryland St., Indianapolis, Ind.



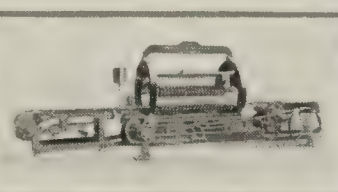

AMERICAN No. 292 REPRESS



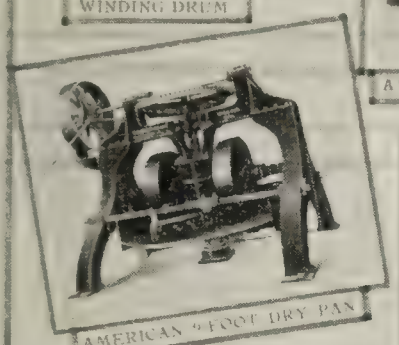

AMERICAN No. 245
WINDING DRUM




AMERICAN No. 291 PUG MILL


AMERICAN No. 20
ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN 9-FOOT DRY PAN



Can't Fill Brick Orders

Road conventions are being enthusiastically attended.

The country is "good roads hungry" from coast to coast.

People are going to have good roads not only this year but next year and for years to come.

We brick advocates know that "Brick Roads" are the "Best Roads." The American Clay Machinery Company and the brick organs and organizations are spending a lot of time, energy and money to have "Brick Roads" adopted everywhere as the Standard of excellence.

As a result there is a great demand for paving brick. Orders in 1914 could not be filled and in 1915 the supply will be away short of the demand.

If a customer cannot get brick when he wants them he is going to be disappointed and will get over wanting them and there is danger of his becoming an advocate and enthusiast for some other material.

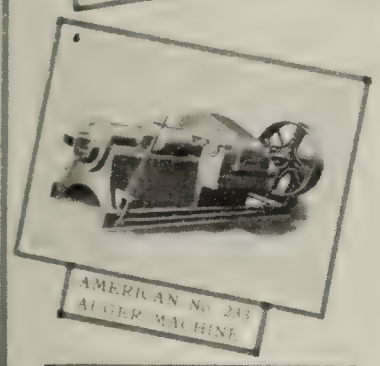
Why not supply all wants and avoid disappointments?

It is possible that your output can be materially increased at small expense. We have several machines that mean greater production without increased cost. Some of our machines will really do more at less cost. In some cases we have increased the output and saved the cost of the improvement in a single season. Possibly we can do this for you. The main point is that more pavers are needed and we can help you to supply them if you want the orders.

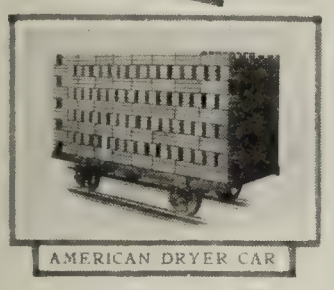
We build every machine and appliance needed by Clay Workers. Large and small orders solicited.

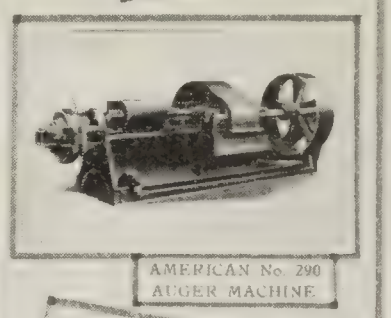
The American Clay Machinery Co.

Bucyrus, Ohio

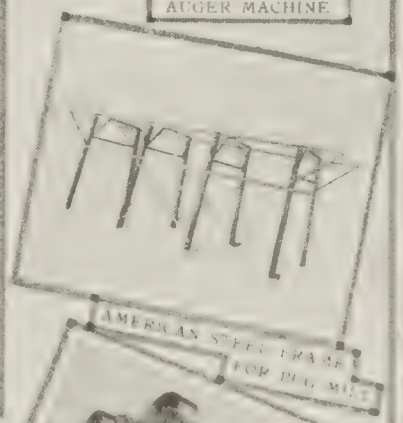

AMERICAN No. 243
AUGER MACHINE


AMERICAN WASTE
HEAT DRYER


AMERICAN DRYER CAR

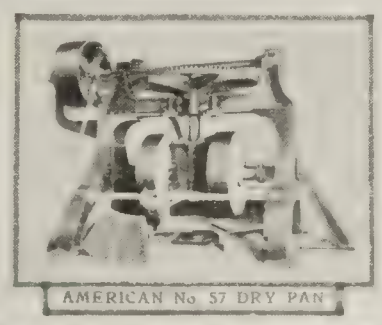

AMERICAN No. 290
AUGER MACHINE

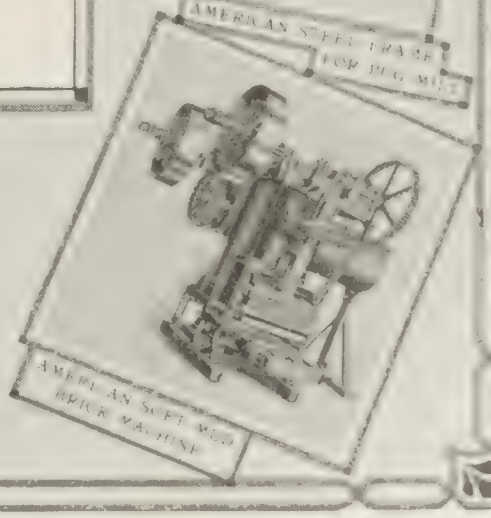

AMERICAN STEAM SHOVEL




AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No. 57 DRY PAN



THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Richardson-Lovejoy Eng. Co.

Aerial Tranmways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.

Blocks.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Manufacturers Equipment Co.
Marinette Iron Works.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.
Martin Brick Mach. Mfg. Co.

Buckets.
Dodge Mfg. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Hinde & Dauch Paper Co.
Manufacturers Equip. Co.
Richardson-Lovejoy Eng. Co.
Rodgers Eng. Co., L. E.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Cement Filler.
Lehigh Portland Cement Co.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Louisville Machine Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Richardson-Lovejoy Eng. Co.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Dodge Mfg. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Schultz & Son, A. L.
Weller Mfg. Co.

Coloring.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Good Roads Machy. Co.
Manufacturers Equipment Co.
Martin Brick Machine Mfg. Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Tables (Hand).
Louisville Machine Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Louisville Machine Co.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Richardson-Lovejoy Eng. Co.
Rodgers Eng. Co., L. E.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

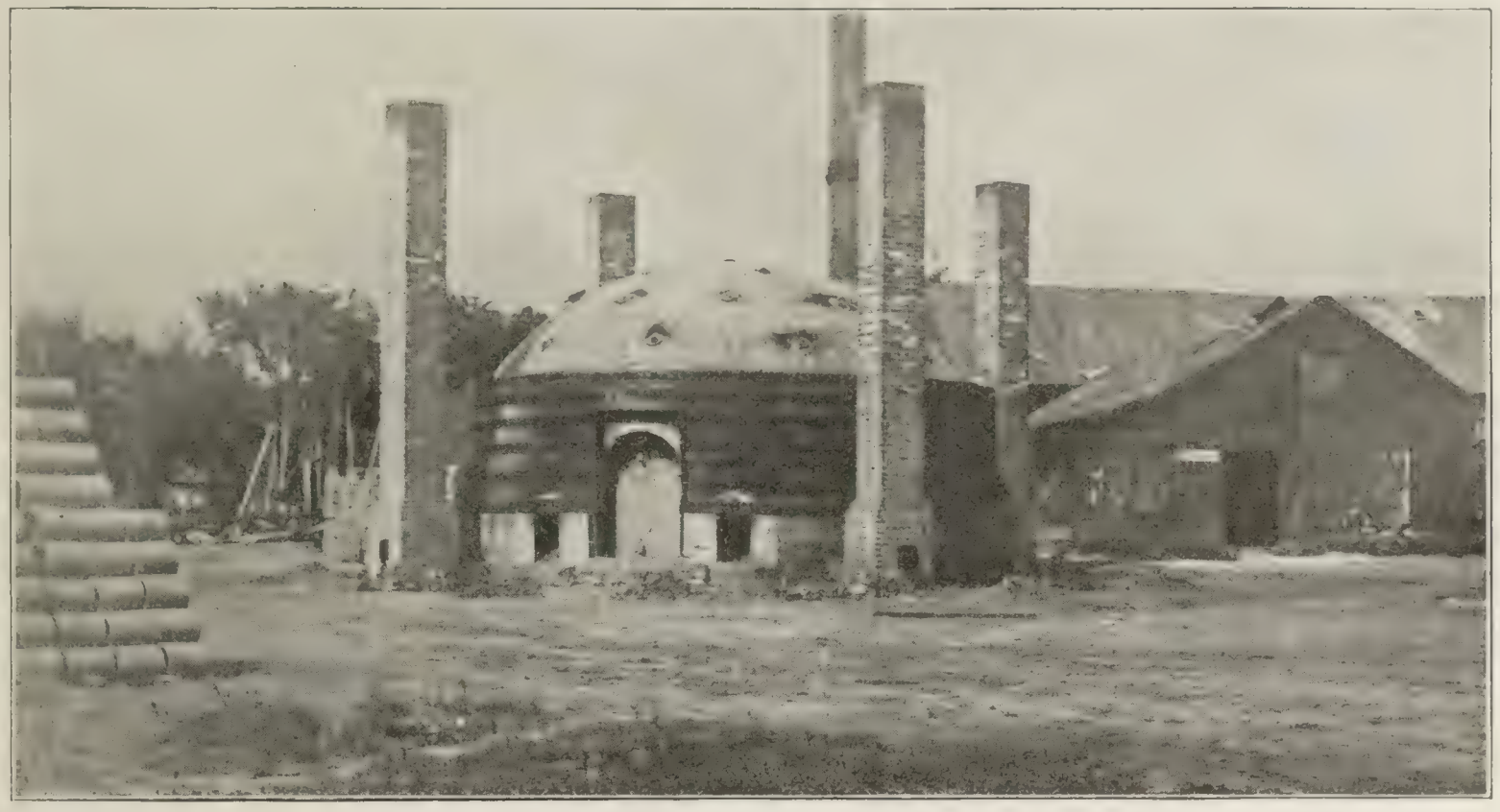
Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Martin Brick M. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Phillips & McLaren.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

The Hook System A Paying Investment

With our system you can handle the same plant capacity with fewer kilns, as they can be turned more often, and not only that but you can build Hook kilns with less money than other types, and still have them just as substantial.



Hook Kiln at Plant of Lombard (Ill.) Brick & Tile Co.

Numerous testimonial letters from Hook Kiln users testify to the great advantage to be found in our system, permitting a saving in fuel and time of burning, and at the same time insuring a more uniform quality of ware, because the heat is so evenly distributed. Even a very tender clay can be burned successfully.

A letter, under date of December 2nd, from the Lombard Brick & Tile Co., Lombard, Ill., says: "We have been having very good success with the Hook Kiln. Brick takes from 60 to 70 hrs., and then it is a nice burn. It takes about 9 tons of coal to burn a kiln."

We show above a photograph of their kiln, and they further advise us that at times they have burned drain tile in as short a period as 32 hours, watersmoking and all.

Start the New Year Right by Installing the Hook System of Burning

Are you wasting fuel and taking more time than necessary for turning your kilns? Submit your proposition to us and give us a chance to show you what the Hook System can do for you. We have helped so many other brick manufacturers to improve the quality of ware and reduce excessive fuel bills that we are confident of our ability to assist you.

You want to investigate now. We have competent masons and the system can be installed in either old or new kilns, round or rectangular, and adapted to either single or multiple stack types.

THE HOOK PATENT KILN COMPANY

VIGO, OHIO

Canadian Office: 250 Defferin St., Toronto

THE BUYERS' DIRECTORY—Continued

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Louisville Machine Co.
Main Belting Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Freese & Co., E. M.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Richardson-Lovejoy Eng. Co.
Rodgers Eng. Co., L. E.
Schaffer Eng. & Equip. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Freese & Co., E. M.
Richardson-Lovejoy Eng. Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Fuel Economizers.
Sturtevant Co., B. F.

Furnaces.
Brown Instrument Co.
Richardson-Lovejoy Eng. Co.
Stupakoff Laboratories.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Nuttall Co., R. D.
Schultz & Son, A. L.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Inspection Tests—Consultation.
Richardson-Lovejoy Eng. Co.

Insulated Wire.
Goodrich Co., B. F.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Klose, K. W.
Manufacturers Equipment Co.
Ohio Kiln Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Equip. Co.
Snowden & Co., Geo. E.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Fairbanks, Morse Co.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Ricketson Mineral Paint Wks.
Wiliams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Dodge Mfg. Co.
Jackson & Church Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Schultz & Son, A. L.
Steele & Sons, J. C.
Wallace Mfg. Co.

Pug Mill Repair Parts.
Lehigh Car, Wheel & Axle Wks.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

Pumps, Steam.
Pulsometer Steam Pump Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.
Thwing Instrument Co.

TRADE B MARK

Barrett's PAVING PITCH



Grand Ave., Beloit, Wis. Brick Pavement Filled with Barrett's Paving Pitch.

A Filler that Outlasts the Pavement

THE question of the right filler is vital to the life of any pavement.

A filler must be waterproof under all conditions, otherwise frost and rain will get in and ruin the foundation.

Paving Pitch is the only filler proved waterproof under all conditions. Asphalt becomes weak in adhesive power in cold weather—the brick shrinks away from it, and water seeps in through the cracks.

Sand of course cannot properly be considered waterproof under any conditions.

Cement is too rigid. It crumbles under vibration, and cracks and "blow-outs" occur in hot weather which later let in the water. With Paving Pitch every joint is an expansion joint, and is waterproof under all conditions. There are Pitch-filled pavements 30 years old and in perfect condition today.

To be sure of a lasting job, specify Barrett's Paving Pitch.

Illustrated booklet free on request.

BARRETT MANUFACTURING COMPANY

NEW YORK CHICAGO PHILADELPHIA BOSTON ST. LOUIS CLEVELAND CINCINNATI
PITTSBURGH DETROIT BIRMINGHAM KANSAS CITY MINNEAPOLIS SALT LAKE CITY SEATTLE

THE BUYERS' DIRECTORY—Continued

Quartz Glass Articles.
Engelhard, Chas.

Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Frank, M. K.
Foster Co., L. B.
Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial.)
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Rattler.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.

Revolution Indicators.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.
Cling-Surface Co.
Dodge Mfg. Co.

Roofing Tile Machinery.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Sand Dryers.
American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Martin Bk. Mach. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Fernholtz Brick Mach. Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Louisville Machine Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.

Shale Planer.
Arbuckle & Co.

Shovels (Hand).
Sackett Screen & Chute Co.

Soft Mud Brick Machines.
American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Wallace Mfg. Co.

Steamers (Clay).
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.
Brown Instrument Co.

Steam Separators.
Canton Grate Co.

Steam Shovels.
American Clay Machy. Co.
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Wallace Mfg. Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Towers.
Caldwell Co., W. E.

Supplies.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.
Weller Mfg. Co.

Tanks.
Caldwell Co., W. E.
Eagle Tank Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Wallace Mfg. Co.

Tile Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co
Standard Dry Kiln Co.

Tramways.
Ambursen Co.

Transfer Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.

Unloading Devices for Pans.
American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.

Wagons.
Auburn Wagon Co.

Water Softeners.
Dodge Mfg. Co.

Water Tanks.
Caldwell Co., W. E.

Wet Pans.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles (Car).
Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.

Winding Drums.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Absolute Control



For the successful drying of your product, it is essential that the drying elements be absolutely under the operator's control. Any user of

The Standard Drier



will be pleased to tell you about the complete success of The Standard Drying System in this and other respects. Write for the catalog. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

NATIONAL FIRE PROOFING CO.
Hobart, Ind.

Martin Grate Co., Chicago, Ill.

Gentlemen:—Replying to yours of the 30th Ult., regarding our grates, will state that the grates you furnished us have been entirely satisfactory, very few repairs being necessary and I am sure it saves us a certain amount on coal bills.

Very truly yours,
(Signed) W. B. Owen, Supt.

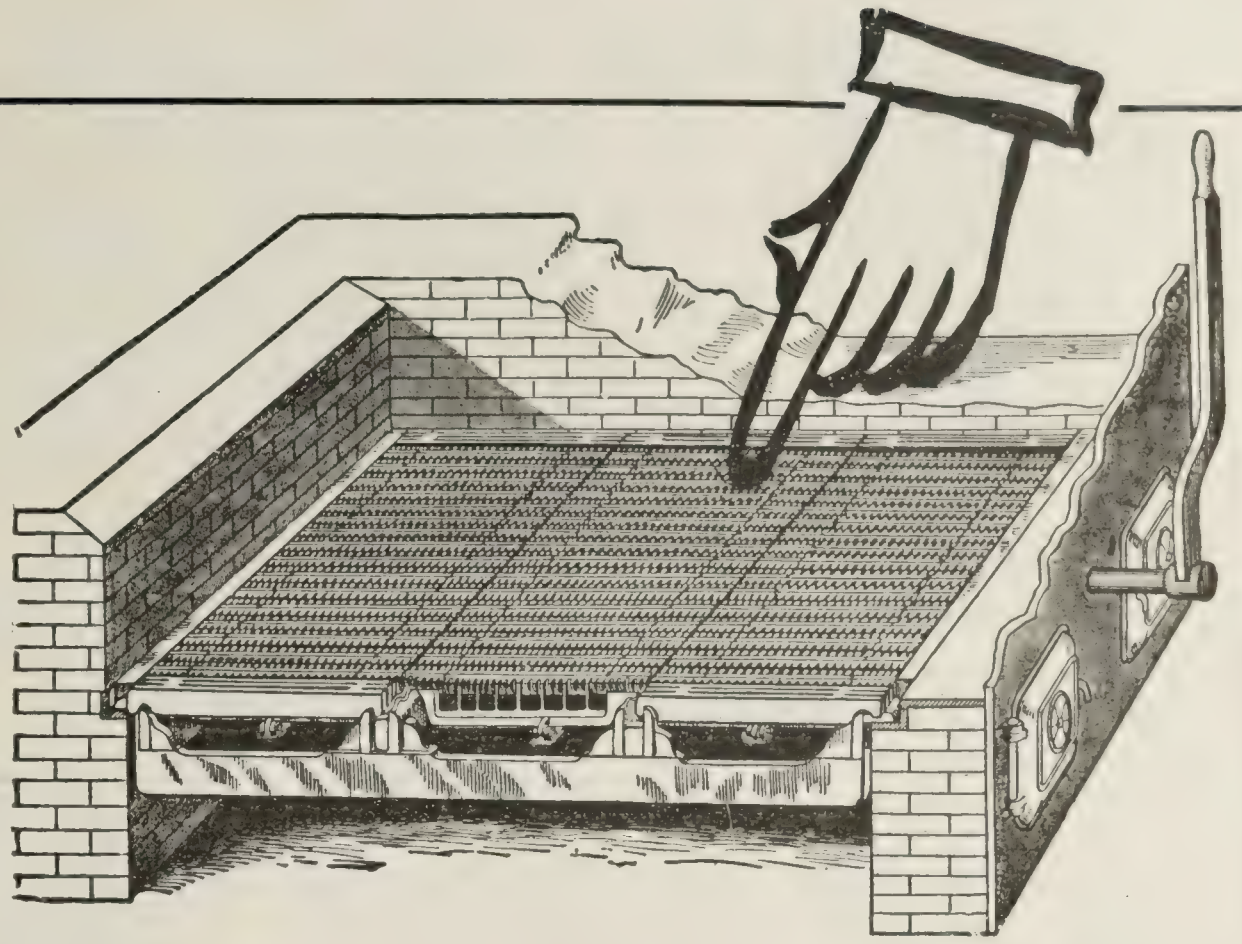
IRON CLAY BRICK CO.
Columbus, Ohio.

Martin Grate Co., Chicago, Ill.

Gentlemen:—In reply to your favor of the 4th, we beg to say that the Martin Grates installed in 1907 at our factory have proven eminently satisfactory. Our engineer is more than pleased. They seem to meet all of your claims.

They are not only labor and fuel savers, but permit us to burn a poorer quality of coal than we could do with the old style grates. They do not warp, and the indications after a year or more of use are that they will last many years.

Very truly yours,
(Signed) J. M. Adams, Gen. Mgr.



MAKE CHEAPER STEAM; USE ANY COAL YOU WISH

Slack or Screenings Burned on a Martin Grate Can Be Made to Give the Steam Produced on Common Grates with Steam Lump

Get a report of your last year's fuel expense. Figure what the same tonnage of slack and screenings would cost. Consider the difference between these two—and you have gathered some vital figures. You've uncovered lost dividends way up in the hundreds of dollars. Those figures represent the revenue you would have earned over and above the dividend you paid.

Yet to burn slack or screenings all you need is a furnace adapted to these grades and that means first, last and all the time—

A MARTIN NON-DUMPING ANTI-FRICTIONAL GRATE

There is no secret in this—no expert help is required to bring about this condition. It's all in the Martin Grate. Slack, screenings, mine-run or any cheap coal in conjunction with the Martin means ideal economical combustion. It is adjustable for all coals wthout the purchase of extra parts.

No long fingers and no wide bars to stick up and burn off or catch cleaning tools. In addition to its being fireproof—it is also fool-proof, because it is automatic in its return home after shaking. Because it is a shaking grate there is not the unnecessary dumping of fire to save work. No good fuel can burn under the Martin Grate or be wasted with the ash. The method of resting grate bars on bearing bars does away with friction. Provision is made for expansion and contraction. Will not warp, bend, sag or buckle from any fire built on it. Easiest repaired of all shaking grates.

Martin Grates are not a product of a here-today-and-gone-tomorrow concern. They have been on the market for the last 16 years and are long past the experimental stage. You run no risk of having an incumbrance on your hands—an unrepairable grate because of the dissoultion of the manufacturing firm.

And with all these advantages it is the most reasonable in first cost. Make 1915 a banner year in the **saving of fuel and the increasing of dividends** by installing Martin Grates the very first month of the new year.

MARTIN GRATE COMPANY, 347 S. Dearborn St., CHICAGO, ILL.

For those who prefer it, we make a Grate of the Dumping Type. In quality and price this Gate will favorably stand comparison with any other Dumping Grate on the market

WEBB WIRE WEARS WELL

WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.

8,000 SOFT MUD BRICK PER HOUR

is the guaranteed capacity of our brick machine with automatic mold dumper combined.

¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

General Traffic Association, Inc., Woodward Building WASHINGTON, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts.

Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

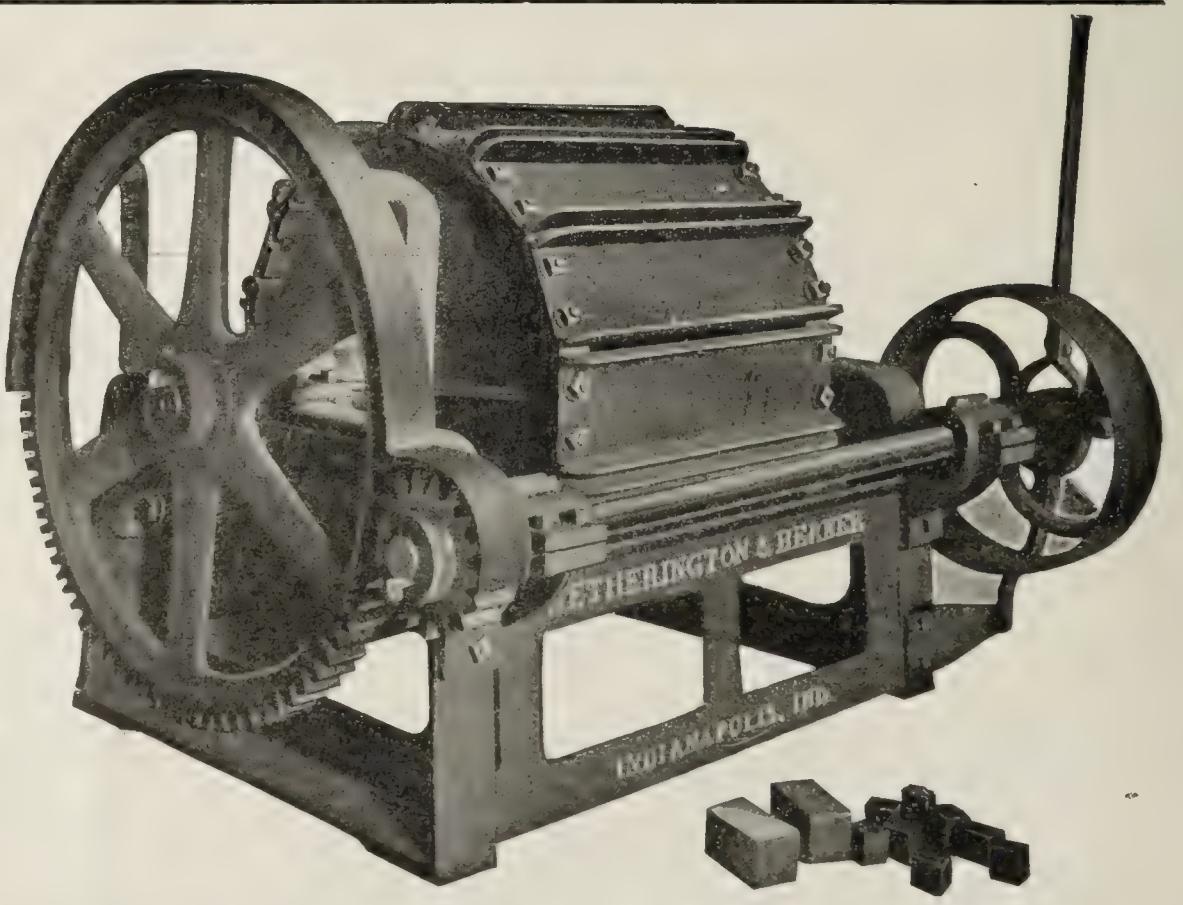
LATEST IMPROVEMENTS

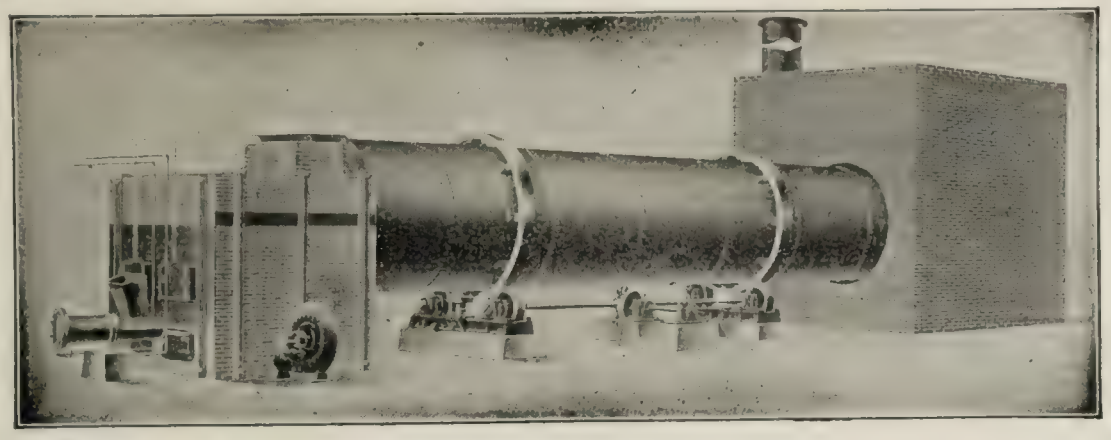
and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

For descriptive circular and prices address

HETHERINGTON & BERNER

INDIANAPOLIS, INDIANA





ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY
WEATHER OR SEASON

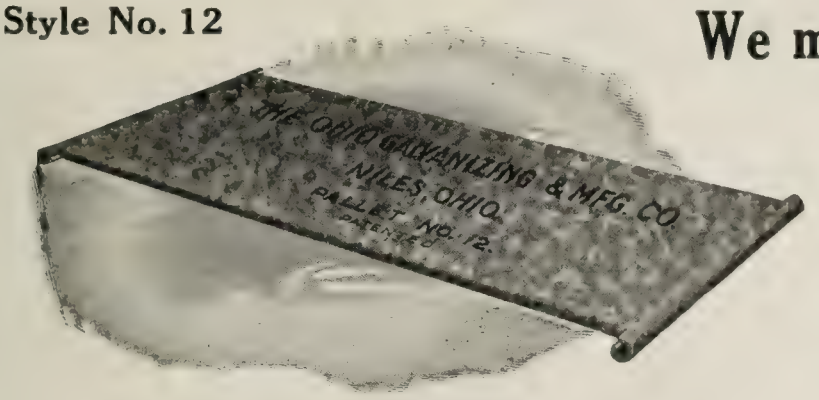
It Assures Uniform Product

YOU CAN THEN SCREEN TO
ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street
NEW YORK

Style No. 12



A Time and Money Saver

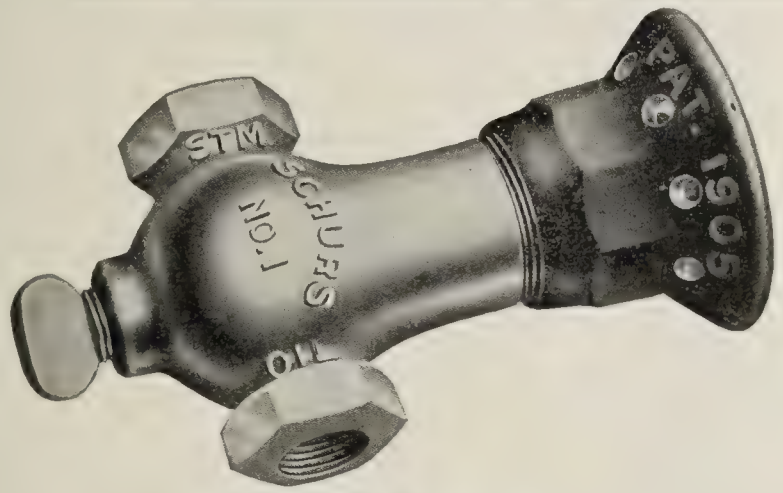
We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.
Niles, Ohio



ADJUSTABLE TIP

Oil Burners

Especially Designed For } BURNING BRICK { Perfectly Economically Uniformly

Kiln Burners Our Specialty—Thousands in Use

Schurs Oil Burner Co.

1007 N. Main St. Los Angeles, Cal.

WRITE US.

TILE MAKERS

Increase Your Sales By distributing to Farmers and others interested in Drainage the Pamphlet entitled

"HINTS ON FARM DRAINAGE"

PRICES:

100 copies	$3.00	300 copies	$ 7.00
200 copies	5.00	500 copies	12.00
1000 copies	$17.00		

On orders of 500 or more the name and address of purchaser will be printed free on outside cover. Send for sample.

BRICK AND CLAY RECORD

445 Plymouth Court Chicago

Open Letter

Illinois Clay Manufacturers

.... Association ....

Annual Convention

NEW LELAND HOTEL, SPRINGFIELD, ILL.

February 8th, 9th, 10th, 1915

MR. CLAYWORKER:

We are going to have an exceptionally good program at this convention. It is going to be worth your while to be there. The program will consist in part of papers and discussions on different topics which are very important and should be of interest to every clayworker.

HOW MUCH DOES IT COST YOU TO OPERATE? Among the many papers to be given, there will be several on **cost accounting,** touching upon different methods and systems used and in detail upon manufacturing and overhead expense. Bring your data on cost keeping. Tell us how **you** do it.

HAVING ANY INSURANCE DIFFICULTIES? This is another phase upon which there will be papers and discussion. You might find just what you wanted.

ANY MANUFACTURING TROUBLES? Several efficient clay manufacturers, along with the Ceramic Department of the University of Illinois, will try to solve them for you.

HOW ABOUT SELLING? There will be some information for you in that line also.

Remember, this is your convention---Boost it.

These papers will be in plain words. You don't have to be a college graduate to understand them.

A. E. Huckins, Secretary,

Program in detail will appear later. Urbana, Illinois.

For the Kiln Furnace

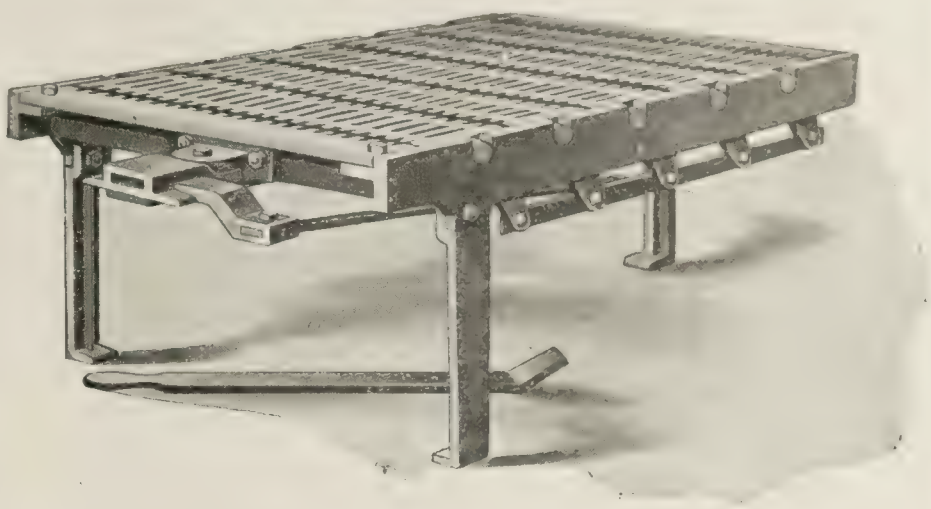
THE CANTON

Shaking and Dumping Grates

Are Sold Under an Absolute Guarantee

Convenience, Economy, Durability

are the three important features and these, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of **Canton Grates.**



The Canton is the Grate for the Plant That *Counts the Cost*

1. **Saves** from 25 to 33⅓% on **fuel,** and a proportionate amount of **labor.**

2. Absolute control of **oxidation** and **reduction.**

3. No loss of heat while stoking; no loss of fuel while shaking.

4. **Burns cheap coal.**

5. Reduces cost of upkeep of furnace brick work, **no clinkers** to stick to sides of box to be chipped loose after cooling.

6. Canton Shaking Grates have a smooth, even surface that will not warp.

We also make the *Famous Canton* Rocking and Dumping *Boiler* Grates

CANTON GRATE CO., Canton, Ohio

Send for Bulletin B. **Office 1706 Woodland Ave., N. W.**

SAWYER

THE ALL 'ROUND BELT



Write for Booklet

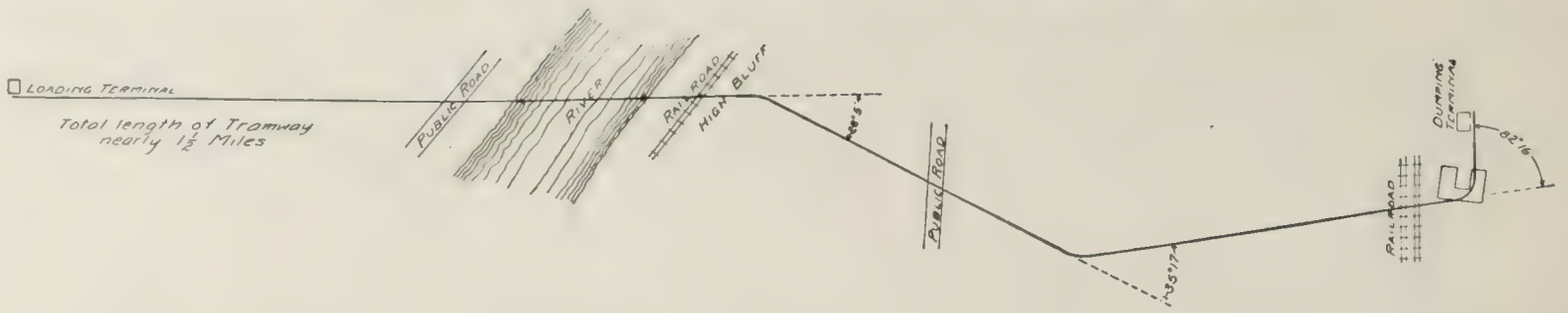
SAWYER CANVAS BELTING

Sawyer Belting Company

Cleveland, O.

SAWYER CANVAS BELTING

AS TO CURVES IN TRAMWAYS



Until the advent of the Lawson Tramway, the curve has been a point to be avoided at almost any cost—necessarily so because of the severe side strain imposed upon the tall towers inseparable from the bucket tramways. There is no room to discuss this in an advertisement but it is fully treated in our Bulletin H along with other details and adaptations. The curve or angle presents almost no difficulties in the Lawson Tramway. The construction is such that side strain is entirely eliminated except the negligible strain arising from the traction rope. There are no towers—the structure is close to the ground—and the added expense for the angle is almost nominal.

The line cut shows one tramway that has been in successful operation for several years. The total length is a little under 1½ miles. There are three curves aggregating a total of 145 degrees 38 ft., or very nearly a complete half-turn. It is operated with 80 cars each carrying from 1200 to 1500 lbs. of rock in addition to the weight of the car. The speed is 400 ft. per minute and the total traffic is 700 tons per day. There is a grade of about 100 ft. in the total length, all against the load. The final curve of nearly a right angle is on the top of the main mill building. The tramway crosses several public roads, two railroads, and one river—the last on a span of about 700 ft.

While it is manifest that a straight line is preferable and naturally the cheapest, the Lawson Tramway has no limitations in regard to curvature. Any number of angles can be negotiated at an increase of cost which is almost nominal.

Our bulletins A and B will be found interesting and the services of our Engineering Department are placed at the disposition of our clients. Lay your case before us with as complete data as possible, and we will give it our best attention.

Very respectfully,

AMBURSEN COMPANY (*Tramway Dept.*), 61 Broadway, New York

"Long Life" to you —and for you

Here is a "Long Life" belt that means long life to your success.

It goes a long way toward cutting down your tonnage costs—delays—power wastes.

Goodrich
LONGLIFE and MAXECON
CONVEYOR BELTS

are long on strength of duck, good friction and ability to work hard and show little wear. In flexibility, troughing and smooth running they are unsurpassed. We will gladly refer you to plants which are finding our belts best.

Factories: Akron, Ohio

The B. F. Goodrich Company

Branches in All Principal Cities

There is nothing in Goodrich Advertising that isn't in Goodrich Goods

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

Steiger Terra Cotta & Pottery Works	San Francisco	Cal.
American Terra Cotto & Ceramic Co.	Chicago	Ill.
Midland Terra Cotta Co.	Chicago	Ill.
Northwestern Terra Cotta Co.	Chicago	Ill.
Advance Terra Cotta Co.	Chicago Heights	Ill.
Holmes & Co., F. B.	Detroit	Mich.
St. Louis Terra Cotta Co.	**St. Louis**	**Mo.**

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	**Hamilton**	**Ill.**
Davenport Brick & Tile Co.	**Davenport**	**Iowa.**
Harvey Brick & Tile Co.	**Harvey**	**Iowa.**
Mason City Brick & Tile Co.	Mason City	Iowa
Postville Clay Products Co.	**Postville**	**Iowa.**
Sheffield Brick & Tile Co.	Sheffield	Iowa
Laclede-Christy Clay Prod. Co.	**St. Louis**	**Mo.**
Keller Brick Co., The	**Cuyahoga Falls**	**Ohio.**
Evans Clay Mfg. Co.	**Uhrichsville**	**Ohio.**
Macatee & Sons, W. L.	**Houston**	**Tex.**

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	**Calgary, Alta.**	**Canada.**
Tift Silica Brick & Stone Co.	**Tifton**	**Ga.**
Alton Brick Co.	**Alton**	**Ill.**
Illinois Brick Co.	Chicago	Ill.
Hamilton Clay Mfg. Co.	**Hamilton**	**Ill.**
Crawfordsville Shale Brick Co.	**Crawfordsville**	**Ind.**
Boone Brick, Tile & Paving Co	**Boone**	**Iowa.**
Harvey Brick & Tile Co.	**Harvey**	**Iowa.**
Mason City Brick & Tile Co.	Mason City	Iowa.
Postville Clay Products Co.	**Postville**	**Iowa.**
Sheffield Brick & Tile Co.	Sheffield	Iowa
Sphar Brick Co., Inc.	Maysville	Ky.
Progress Press Brick Co.	St. Louis	Mo.
Hodkinson, Wm.	**Beaver City**	**Nebr.**
Post, W. & J., Glen Head	**Long Island**	**N. Y.**
Alliance Brick Co.	**Alliance**	**Ohio.**
Alliance Clay Product Co.	**Alliance**	**Ohio.**
Belden Brick Co., The	**Canton**	**Ohio.**
Metropolitan Paving Brick Co.,	**Canton**	**Ohio**
Keller Brick Co., The	**Cuyahoga Falls**	**Ohio.**
Gaither Brick Co.	**Okmulgee**	**Okla.**
Freeport Clay Pro. & Min. Co.	Freeport	Pa.
Lock Haven Brick & Tile Co.	Lock Haven	Pa.
Paxton Brick Co.	Middleburg	Pa.
Watsontown Brick Co.	**Watsontown**	**Pa.**
D'Hanis Brick & Tile Co.	**D'Hanis**	**Tex.**
Wisconsin Brick Co.	**Madison**	**Wis.**
Sheridan Press Brick & Tile Co., Inc.	**Sheridan**	**Wyo.**

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	**Chicago**	**Ill.**
Meacham & Wright Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	**New York**	**N. Y.**
Macatee & Sons, W. L.	**Houston**	**Tex.**

BRICK(FACE)

Pacific Sewer Pipe Co.	**Los Angeles**	**Cal.**
Tregillus Clay Pro. Co., Longhead Bldg.	**Calgary, Alta.**	**Canada.**
Denver Pressed Brick Co.	Denver	Colo.
Hood Brick Co., B. Mifflin	**Atlanta**	**Ga.**
Tift Silica Brick & Stone Co.	**Tifton**	**Ga.**
Kimbell Brick Co., S. S.	**Chicago**	**Ill.**
Bonner & Marshall Brick Co.	Chicago	Ill.
Meacham & Wright Brick Co.	Chicago	Ill.
Rosing, Astrid S.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Indiana Brick Co.	Anderson	Ind.
Crawfordsville Shale Brick Co.	**Crawfordsville**	**Ind.**
Meyer & Co., A. B.	Indianapolis	Ind.
Boone Brick, Tile & Paving Co.	**Boone**	**Iowa.**
Continental Brick Co.	**Davenport**	**Iowa.**
Gethmann Brick Co.	Gladbrook	Iowa
Kansas Buff Brick & Mfg. Co.	Buffville	Kan.
Sphar Brick Co., Inc.	Maysville	Ky.
Holmes & Co., F. B.	Detroit	Mich.
Morman & Co., S. A.	Grand Rapids	Mich.
Progress Press Brick Co.	St. Louis	Mo.
Hydraulic-Press Brick Co.	**St. Louis**	**Mo.**
Progress Press Brick & Machine Co.	**St. Louis**	**Mo.**
Upton, F. R.	Newark	N. J.
Chestnut Tidge Brick Co.	New York	N. Y.
Fiske & Company, Inc.	**New York**	**N. Y.**
York-Penn Brick Co.	Syracuse	N. Y.
Alliance Brick Co.	**Alliance**	**Ohio.**
Alliance Clay Products Co.	**Alliance**	**Ohio.**
Stark Brick Co.	Canton	Ohio
Belden Brick Co.	**Canton**	**Ohio.**
Metropolitan Paving Brick Co.	Canton	Ohio
Shorey-Willis Brick & Supply Co.	Cincinnati	Ohio
Euclid Builders Supply Co.	Cleveland	Ohio
Farr Brick Co.	Cleveland	Ohio
Hocking Valley Products Co.	**Columbus**	**Ohio.**
Ironclay Brick Co., The	**Columbus**	**Ohio.**
Keller Brick Co., The	**Cuyahoga Falls**	**Ohio.**
Keim Brick & Tile Co.	**Louisville**	**Ohio**
McArthur Brick Co.	**McArthur**	**Ohio.**
Hocking Valley Fire Clay Co.	Nelsonville	Ohio
Toronto Fire Clay Co.	Toronto	Ohio
Minglewood Coal Co.	Wooster	Ohio
Gaither Brick Co.	**Okmulgee**	**Okla.**
Bradford Pressed Brick Co.	**Bradford**	**Pa.**
Freeport Clay Pro. & Min. Co.	Freeport	Pa.
Chestnut Ridge White Bk. Co.	**Kunkletown**	**Pa.**
Beaver Clay Mfg. Co.	New Galilee	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	**Pittsburg**	**Pa.**
Wynn & Starr Co.	Trafford	Pa.
Watsontown Brick Co.	**Watsontown**	**Pa.**
D'Hanis Brick & Tile Co.	**D'Hanis**	**Tex.**
Macatee & Sons, W. L.	**Houston**	**Tex.**
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	**Sheridan**	**Wyo.**

BRICK (FIRE)

Pacific Sewer Pipe Co.	**Los Angeles**	**Cal.**
Steiger Terra Cotta & Pottery Works	San Francisco	Cal.
Howards' Co.	New Haven	Conn.
Alsey Brick & Tile Co.	**Alsey**	**Ill.**
Rosing, Astrid S.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Chicago Retort & Fire Brick Co.	**Chicago**	**Ill.**
Holmes & Co., F. B.	Detroit	Mich.
Mexico Brick & Fire Clay Co.	**Mexico**	**Mo.**
Laclede-Christy Clay Prod. Co.	**St. Louis**	**Mo.**
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	**Perth Amboy**	**N. J.**
Greenpoint Fire Brick Co., 111 Clay St.	**Brooklyn**	**N. Y.**
Fiske & Company, Inc.	**New York**	**N. Y.**
Maurer & Son, H.	**New York**	**N. Y.**
Belden Brick Co., The	**Canton**	**Ohio.**
Dover Fire Brick Co.	**Cleveland**	**Ohio.**
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	**Oak Hill**	**Ohio.**
Evans Clay Mfg. Co.	**Uhrichsville**	**Ohio.**
Soisson Fire Brick Co., Jos.	**Bolivar**	**Pa.**
North Bend Fire Brick Co.	Gleasonton	Pa.
Queens Run Fire Brick Co.	**Lock Haven**	**Pa.**
Brighton Fire Brick Co.	New Brighton	Pa
Patton Clay Mfg. Co.	Patton	Pa.
Reading Fire Brick Works.	**Reading**	**Pa.**
Elk Fire Brick Co.	St. Marys	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	**Kankakee**	**Ill.**
Progress Press Brick Co.	St. Louis	Mo.
Clymer Brick & Fire Clay Co.	Clymer	Pa.

The list of Trade Names and of Clay Products Associations, omitted from this issue, will reappear with the January 5th edition.

Classified Directory of Clay Product Manufacturers—Cont.

BRICK OR BLOCK (PAVING)

Tregillus Clay Product, Ltd.	Calgary, Alta	Canada.
Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Lucke & Co.	Chicago	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Holmes & Co., F. B.	Detroit	Mich.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Globe Brick Co.	East Liverpool	Ohio
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Toronto Fire Clay Co.	Toronto	Ohio
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Clymer Brick & Fire Clay Co.	Clymer	Pa.
Lock Haven Brick & Tile Co.	Lock Haven	Pa.
Paxton Brick Co.	Middleburg	Pa.
Patton Clay Mfg. Co.	Patton	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY BRICK

Clymer Brick & Fire Clay Co.	Clymer	Pa.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Beaverville Brick & Tile Co.	Beaverville	Ill.
Campus Brick & Tile Works	Campus	Ill.
Rosing, Astrid S.	Chicago	Ill.
Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Mason City Brick & Tile Co.	Mason City	Ia.
Postville Clay Products Co.	Postville	Iowa.
Sheffield Brick & Tile Co.	Sheffield	Ia.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

EXPANSION JOINT

Beck, Robt. L.	Cleveland	Ohio

FIREPROOFING

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Metropolitan Paving Brick Co.,	Canton	Ohio

FLOWER POTS

Hews & Co., A. H., Inc.	Cambridge	Mass.

FLUE LINING

Cannelton Sewer Pipe Co.	Cannelton	Ind.

FURRING TILE

Kankakee Tile & Brick Co., The,	Kankakee	Ill.

GLASS HOUSE REFRACTORIES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.

PROMENADE AND FLOOR TILE

Meacham & Wright Brick Co.	Chicago	Ill.
Pittsburg Tile Mfg. Co.	East Liverpool	Ohio.
United States Roofing Tile Co.	Parkersburg	W. Va.

RAGGLE BLOCKS

Kimbell Brick Co., S. S.	Chicago	Ill.

REFRACTORIES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Federal Clay Products Co.	Mineral City	Ohio

ROOFING TILE

Holmes & Co., F. B.	Detroit	Mich.
National Roofing Tile Co.	Lima	Ohio
United States Roofing Tile Co.	Parkersburg	W. Va.

SALT GLAZED BRICK

Progress Press Brick Co.	St. Louis	Mo.
Stark Brick Co.	Canton	Ohio
Hocking Valley Fire Clay Co.	Nelsonville	Ohio

SEWER BLOCK

Davenport Brick & Tile Co.	Davenport	Iowa.

SEWER BRICK

Evans Clay Mfg. Co.	Uhrichsville	Ohio.

SEWER PIPE

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Steiger Terra Cotta & Pottery Works	San Francisco	Cal.
Rosing, Astrid S.	Chicago	Ill.
Cannelton Sewer Pipe Co.	Cannelton	Ind.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Metropolitan Paving Brick Co.,	Canton	Ohio
East Ohio Sewer Pipe Co., The	Irondale	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Patton Clay Mfg. Co.	Patton	Pa.

SILO BLOCK

Davenport Brick & Tile Co.	Davenport	Iowa.
Mason City Brick & Tile Co.	Mason City	Ia.

TERRA COTTA MANTELS

St. Louis Terra Cotta Co.	St. Louis	Mo.

TERRA COTTA MONUMENTS AND STATUARY

St. Louis Terra Cotta Co.	St. Louis	Mo.

TILE (PARTITION)

Kankakee Tile & Brick Co.	Kankakee	Ill.

TILE (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

TILE (PROMENADE)

Hood Brick Co., B. Mifflin	Atlanta	Ga.
Pittsburg Tile Mfg. Co.	E. Liverpool	Ohio.

WALL COPING

Cannelton Sewer Pipe Co.	Cannelton	Ind.

WATER GAS LININGS

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.

DEALERS

Hood Brick Co., B. Mifflin	Atlanta	Ga.
Bonner & Marshall Brick Co.	Chicago	Ill.
Kimbell Brick Co., S. S.	Chicago	Ill.
Lucke & Co., F. W.	Chicago	Ill.
Meacham & Wright Brick Co.	Chicago	Ill.
Rosing, Astrid S.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Wisconsin Lime & Cement Co.	Chicago	Ill.
Meyer & Co. A. B.	Indianapolis	Ind.
Holmes & Co., F. B.	Detroit	Mich.
Morman & Co.	Grand Rapids	Mich
Upton, F. R.	Newark	N. J.
Fiske & Company, Inc.	New York	N. Y.
Chestnut Ridge Brick Co.	New York	N. Y.
York-Penn Brick Co.	Syracuse	N. Y.
Shorey-Willis Bk. & Supply Co.	Cincinnati	Ohio
Euclid Builders Supply Co.	Cleveland	Ohio
Minglewood Coal Co.	Wooster	Ohio
Macatee & Sons, W. L.	Houston	Tex.
Wisconsin Brick Co.	Madison	Wis.

DEALERS (FACE BRICK)

Wisconsin Brick Co.	Madison	Wis.

DEALERS (HOLLOW TILE)

Wisconsin Brick Co.	Madison	Wis.

The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

Progress Press Brick Company

RED GRANITE
GRAY, BUFF
MOTTLED GRAY
OLD GOLD
BUFF MOTTLED
BROWN, RED
ORNAMENTAL
SHAPES
ENAMELED, MAT
IMPERVIOUS
TAPESTRY
SAND MOULD
PAVING, MISSION
COMMON BUILDING
HOLLOW, VITREOUS
AND SALT
GLAZED BRICK

St. Louis

THE COLONIAL PRESSED BRICK COMPANY

Mfgrs. of . . . "Coruga" and "Old Hickory" FACING BRICKS

MOGADORE **OHIO**

Index of the Display Clay Product Advertisers

Advance Terra Cotta Co., Chicago, Ill....112
Albion Shale Brick Co., Albion, Ill....110
Alliance Brick Co., Alliance, Ohio....116
Alliance Clay Pro. Co., Alliance, Ohio....108
Alsey Brick & Tile Co., Alsey, Ill....103
Alton Brick Co., Alton, Ill....110
American Cay & Cement Corp., Rochester, N. Y....111
American Enameled Brick & Tile Co., New York City....116
American Terra Cotta & Ceramic Co., Chicago, Ill....112

Barr Clay Co., Streator, Ill....108
Beaver Clay Mfg. Co., New Galilee, Pa....116
Beaverville Brick & Tile Co., Beaverville, Ill....112
Beck, Robt. L., Cleveland, Ohio....110
Belden Brick Co., Canton, Ohio....116
Bessemer Limestone Co., Youngstown, Ohio....108
Big Four Clay Co., Canton, Ohio....106
Bonner & Marshall Brick Co., Chicago, Ill....115
Bradford Press Brick Co., Bradford, Pa....116
Brighton Fire Brick Co., New Brighton, Pa....103

Campus Brick & Tile Works, Campus, Ill....112
Carlyle Paving Brick Co., Portsmouth, Ohio....107
Chestnut Ridge Brick Co., New York City....116
Chicago Retort & Fire Brick Co., Chicago, Ill....102
Cleveland Brick & Clay Co., Cleveland, Ohio....106
Clinton Paving Brick Co., Clinton, Ind....110
Clymer Brick & Fire Clay Co., Clymer, Pa....106
Colonial Pressed Bk. Co., Mogadore, O....101

Danville Brick Co., Danville, Ill....107
Davis Fire Brick Co., Oak Hill, Ohio....102
Deckman-Duty Brick Co., Cleveland, Ohio....106
Denver Pressed Brick Co., Denver, Colo....115
Dover Fire Brick Co., Cleveland, Ohio....102
Dunn Brick Works, Erie, Pa....114
Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio....104-105

Elk Fire Brick Co., St. Marys, Pa....103
Euclid Builders Supply Co., Cleveland, Ohio....116
Evans Clay Mfg. Co., Uhrichsville, Ohio....102
Farr Brick Co., Cleveland, Ohio....115
Federal Clay Pro. Co., Mineral City, Ohio....103
Fiske & Co., Inc., New York and Boston....119
Freeport Clay Pro. & Min. Co., Freeport, Pa....116

Gethmann Brick Co., Gladbrook, Iowa....118
Globe Brick Co., East Liverpool, Ohio....110

Hamburg Vit. Brick Co., Philadelphia, Pa....107
Harris Brick Co., Cincinnati, Ohio....108
Hocking Valley Brick Co., Columbus, Ohio....107
Hocking Valley Fire Clay Co., Nelsonville, Ohio....112
Holmes & Co., F. B., Detroit, Mich....118
Howards' Co., New Haven, Conn....106
Hydraulic-Press Brick Co., St. Louis, Mo....117

Illinois Brick Co., Chicago, Ill....109
Indiana Brick Co., Anderson, Ind....118
Ironclay Brick Co., Columbus, Ohio....101

Kansas Buff Brick & Mfg. Co., Buffville, Kan....118
Keim Brick & Tile Co., Louisville, Ohio....111
Keller Brick Co., Cuyahoga Falls, Ohio....115
Kimbell Brick Co., S. S., Chicago, Ill....115

Lock Haven Brick & Tile Co., Lock Haven, Pa....108
Lucke & Co., F. W., Chicago, Ill....110

Mason City Brick & Tile Co., Mason City, Iowa....114
Maurer & Son, H., New York City....102
Mayer Brick Co., C. P., Bridgeville, Pa....107
McArthur Brick Co., McArthur, Ohio....111
Meacham & Wright Brick Co., Chicago, Ill....118
Metropolitan Paving Brick Co., Canton, Ohio....107
Mexico Brick & Fire Clay Co., Mexico, Mo....103
Meyer & Co., A. B., Indianapolis, Ind....118
Midland Terra Cotta Co., Chicago, Ill....112
Minglewood Coal Co., Wooster, Ohio....118
Morman & Co., S. A., Grand Rapids, Mich....118
Murphysboro Paving Brick Co., Murphysboro, Ill....108

National Paving Brick Assoc., Cleveland, Ohio....121
National Roofing Tile Co., Lima, Ohio....111
Nelsonville Brick Co., Nelsonville, Ohio....106
North Bend Fire Brick Co., Gleasonton, Pa....103
Northwestern Terra Cotta Co., Chicago, Ill....113

Panama-Pacific Clay Products Assoc....122
Patton Clay Mfg. Co., Patton, Pa....106
Paxton Brick Co., Middleburg, Pa....108
Pittsburg Tile Mfg. Co., East Liverpool, Ohio....111
Progress Press Brick Co., St. Louis, Mo....101
Purington Paving Brick Co., Galesburg, Ill....107

Queens Run Fire Brick Co., Lock Haven, Pa....102
Quinn, John, Houtzdale, Pa....103

Raritan Ridge Clay Co., Metuchen, N. J....110
Rosing, Astrid S., Chicago, Ill....120

St. Louis Vit. & Fire Brick Co., St. Louis, Mo....103
Shawmut Vit. Paving Brick Works, Shawmut, Pa....106
Sheffield Brick & Tile Co., Sheffield, Iowa....114
Shorey-Willis Brick & Supply Co., Cincinnati, Ohio....120
Soisson Fire Brick Co., Jos., Connellsville, Pa....102
Sphar Brick Co., Inc., Maysville, Ky....120
Stark Brick Co., Canton, Ohio....112
Steiger Terra Cotta & Pottery Works, San Francisco, Cal....112
Sterling Brick Co., Olean, N. Y....108

Terre Haute Vit. Brick Co., Terre Haute, Ind....110
Thomas Moulding Brick Co....114
Toronto Fire Clay Co., Toronto, Ohio....120

United Brick Co., Greensburg, Pa....106
United States Roofing Tile Co., Parkersburg, W. Va....111
Upton, F. R., Newark, N. J....120

Watsontown Brick Co., Watsontown, Pa....114
Wisconsin Brick Co., Madison, Wis....120
Wisconsin Lime & Cement Co., Chicago, Ill....111
Wynn & Starr Co., Trafford, Pa....120

York-Penn Brick Co., Syracuse, N. Y....120

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

195 So. Clark St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

Mexico Brick & Fire Clay Co.
Mexico, Mo.

Manufacturers of

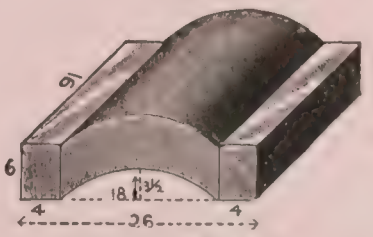
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY
ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.
New Brighton, Pennsylvania

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

The North Bend Fire Brick Co.

Manufacturers of

North Bend Fire Brick

Gleasonton, Pa.

Western Selling Agents
Dover Fire Brick Company, Cleveland, Ohio

Elk Fire Brick Company

High Grade Fire Brick and Clay

ST. MARYS
PENNSYLVANIA, U. S. A.

The Permanent Way



Permanent if Properly Cared For.
Durable Under any Conditions.
Brick in Pavements is the Most Durable of all Manufactured Materials.
Wire-Cut-Lug Brick is the Most Durable Type of Paving Brick.
Manufactured by 23 Competing Companies operating 36 Plants.

Write to

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

(*Licensors*)

Pave With Brick

Caesar conquered Gaul by building Good Roads.

Napoleon won Italy by means of his Alpine highway.

Agriculture, Commerce, Industries thrive with dependable highways.

A modern Brick street or highway solves the problem of clean, easy, durable transportation.

Brick country highways are supplanting electric and steam railway traffic for local collection and distribution.

Vitrified Brick with Grout Filler makes the best and most durable highway.

Wire-Cut-Lug Brick is the best paving brick made. The following companies are manufacturers:



Brick Pavement In Front of the Loading Platforms at Sears-Roebuck Warehouse (Before Grouting).

Manufacturers:

Corry Brick & Tile Company, Corry, Pa.
United Brick Company, Greensburg, Pa.
Plant at Conneaut, Ohio.
Sterling Brick Company, Olean, N. Y.
Plant at Olean, N. Y.
Reynoldsville Brick & Tile Co., Reynoldsville, Pa.
Danville Brick Company, Danville, Ill.
Clinton Paving Brick Company, Clinton, Ind.
Alton Brick Company, Alton, Ill.
Deckman-Duty Brick Company, Cleveland, Ohio.
Plants at Cleveland, Carrollton and Malvern, O.
Tuna Valley Pressed Brick Company, Bradford, Pa.
Foster Paving Block Company, Bradford, Pa.
Plants at Bradford, Pa., Binghamton, N. Y., and Youngsville, Pa.
Metropolitan Paving Brick Company, Canton, Ohio.
Four plants at Canton, O., one at Willow, Ohio.
Bessemer Limestone Company, Youngstown, Ohio.
Three Plants at Bessemer, Pa.
Peebles Paving Brick Company, Portsmouth, Ohio.
Two Plants at Portsmouth, Ohio, one at Firebrick, Ky.
Murphysboro Paving Brick Co., Murphysboro, Ill.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Plants at Robbins, Tenn., Coaldale, Ala.
McAvoy Vitrified Brick Co., Philadelphia, Pa.
Plant at Perkiomen Junction, Pa.
Windsor Brick Company, Akron, Ohio.
Hocking Valley Brick Co., Columbus, Ohio.
Plant at Logan, Ohio.
Veedersburg Paver Co., Veedersburg, Ind.
Springfield Paving Brick Co., Springfield, Ill.
Terre Haute Vitrified Brick Co., Terre Haute, Ind.
Albion Vitrified Brick Co., Albion, Ill.
Alliance Clay Product Co., Alliance, Ohio.
The Westport Paving Brick Co., Baltimore. Md.
Plant at Westport, Baltimore.

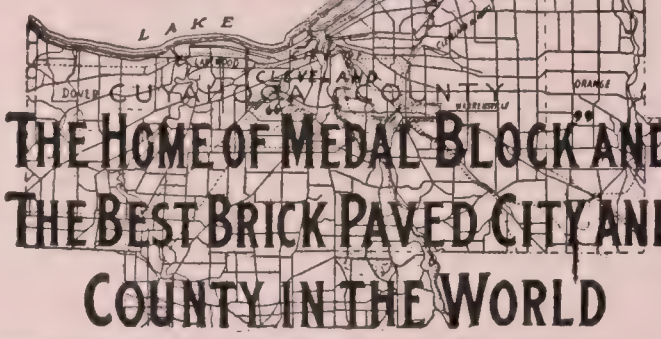
The Dunn Wire-Cut-Lug Brick Company :: Conneaut, Ohio
(Licensors)

The Howards' Co.
NEW HAVEN, CONN.
Manufacturers of
FIRE BRICK
In Any Grade and Shape Desired
Special Attention Given to the Manufacture of
Tropenas Converter Brick

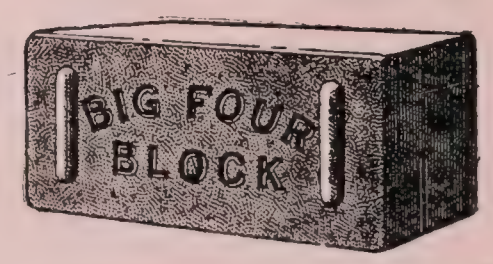
Clymer Brick and Fire Clay Company
Clymer, : Pennsylvania
Manufacturers of
Paving Brick, Face Brick,
Hollow Brick and Blocks,
Radial Chimney Brick,
"Ruftex Brick" ∴ ∴

Patton Clay Mfg. Co.
Patton, Cambria Co., Pa.
Sewer Pipe
Fire Brick
Paving Blocks
Four Large Plants Daily Capacity, Fifty Car Loads

The United Brick Company
GENERAL OFFICE
GREENSBURG, PA.
WORKS
CONNEAUT, OHIO
Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)
A High Grade Paving Block for City Streets and Main Highways

THE DECKMAN-DUTY BRICK CO.
CLEVELAND OHIO.


THE HOME OF "MEDAL BLOCK" AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD
"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

A Uniform Block which makes an Ideal Pavement


THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

The Cleveland Brick and Clay Co.
MANUFACTURERS OF


1032 Engineers Bldg. Cleveland, Ohio

The Nelsonville Brick Co.
Nelsonville, Ohio


Pioneer Paving Block Manufacturers
Established 1887

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Meets All Tests

Plants Logan, O. *General Office* Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa. Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS.

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory:
Zanesville, Ohio

Office:
St. Paul Bldg.
Cincinnati, O.

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Also High-Grade Building and Face Brick

ALLIANCE - - - - OHIO

Paxton Brick Company

Manufacturers of

Red Shale Paving Blocks and Building Brick

SMOOTH AND ROUGH TEXTURE

MIDDLEBURG PA.

Lock Haven Brick & Tile Co.

Manufacturers of the

Lock Haven Paving Block and Building Brick

Lock Haven, Pennsylvania

WM. SCHLAKE, *President* WM. G. BOHNSOCK, *Secretary*
C. B. OBERMEYER, *Vice-President*

ILLINOIS BRICK COMPANY

Room 1717
111 W. Washington St.
CHICAGO

Telephone
Main 17

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company

Clinton, Indiana

Merely advertising as the **BEST** doesn't make it **BEST!**

"Who Ever Saw Paper Refuse Ink?"

Ironstone Block

Out tested every block tested in competition with it during **1913.**

For Heavy Traffic Streets and Freight Yards

Terre Haute Vitrified Brick Company

Terre Haute, Indiana

Albion Shale Blocks Stand Test

In Chicago, Milwaukee, St. Louis, Louisville, Indianapolis, Evansville, Terre Haute, and all intermediate cities

Plant Most Modern in Construction and Equipment

ALBION SHALE BRICK COMPANY

ALBION, ILL.

F. W. LUCKE & CO.

Distributors of

High Grade Paving Brick

1217 Chamber of Commerce Building

CHICAGO, ILL.

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Raritan Ridge Clay Co.

METUCHEN, N. J.

Miners and Shippers of

Fire, Terra Cotta and Tile Clays

ALSO

Foundry and Other Fire Sands, Kiln Setting and Building Sands.

Shipments via Penna. & L. V. R. R.'s

Also L. V. Freight Wharves at Perth Amboy, N. J.

ROBERT L. BECK

DISTRIBUTOR



The Perfect Expansion Joint for all kinds of Pavements

311-312 The Arcade CLEVELAND, O.

Wisconsin Lime & Cement Co.

Chicago's Leading and Largest Building Supply Dealers
Distributes more High Grade Facing Brick than
many exclusive brick houses

Chamber of Commerce Bldg., Chicago, Ill.

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: ***Louisville, O.***

Factory: ***Mapleton, O.***

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

The United States Roofing Tile Co.

ROOFING TILES

Promenade and Floor Tiles

Pure SHALE products of superior quality and patterns.

Two Factories—Prompt Deliveries

GENERAL OFFICE
PARKERSBURG - WEST VIRGINIA

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates
Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-
Masons' Supplies—All Indestructible
Building Materials

The McArthur Brick Co.

Manufacturers of

Specialties in Face Brick

McArthur, Ohio

Drain Tile

We manufacture a superior quality of drain tile. Can make shipments promptly.

Beaverville Brick & Tile Co.

Beaverville, Illinois

N. L. MAMER J. M. MAMER

CAMPUS BRICK AND TILE WORKS

MAMER BROS., Owners

Drain Tile 4 to 18 inch

Brick and Hollow Building Blocks

CAMPUS ILLINOIS

Athena Salt Glazed Brick

in

Light - Medium - Dark Shades

Are used where sanitary conditions, permanency and beauty are desired.

Capacity One Million per Month

Offers great possibilities for the dealer.

The Hocking Valley Fire Clay Co.

Nelsonville, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.

CANTON, OHIO

We make
TERRA COTTA
to order
We carry
TERRA COTTA
in stock
Our hobby is
TO PLEASE

MIDLAND TERRA COTTA CO.
ARCHITECTURAL TERRA COTTA
CHICAGO, ILLINOIS

The American Terra Cotta & Ceramic Co.

Manufacturers of

High Grade Architectural Terra Cotta

Works
Terra Cotta,
Ill.

Office
2008 Peoples Gas Bldg.
Chicago

ADVANCE TERRA COTTA COMPANY

29 South La Salle Street, CHICAGO

MANUFACTURERS OF HIGH-GRADE

Architectural Terra Cotta

Estimates furnished promptly

Factory: CHICAGO HEIGHTS, ILL.

Steiger Terra Cotta and Pottery Works

Manufacturers of Architectural Terra Cotta, Pressed Brick, Sewer Pipe, Chimney Pipe, Flue Lining, Fire Brick, Conduit Tile, Mantel Tile, Acid Wares.

Factory: South San Francisco, San Mateo Co

Main Office, 729 Mills Building SAN FRANCISCO, CAL.



CONWAY BUILDING, CHICAGO D. H. BURNHAM & CO., Architects

THE FRONTS OF THIS BUILDING FROM CORNICE OF SECOND STORY TO SKYLINE ARE

"NORTHWESTERN"
ENAMELED TERRA COTTA

This material affords clean, cheerful fronts for smoky cities, as it may be easily cleaned with soap and water. Photo shows building in process of cleaning. Note scattered dirty pieces and generally the deposit of dirt during erection. Dark portion below scaffolds shows 14 months accumulation of Chicago soot.

THE NORTHWESTERN TERRA COTTA CO.
CHICAGO

Sheffield Brick & Tile Company

Manufacturers of

Common Brick
Hollow Building Blocks
Drain Tile

(4 in. to 12 in. inclusive)

Made from Exceptionally Clean Shale

Sheffield **Iowa**

The Dunn Brick Works

Lock Box 582, **Erie, Pa.**

Manufacturers of

Shale Building Brick

MASON CITY BRICK & TILE CO.

MASON CITY, IOWA

Manufacturers of

DENISON Clay Products

Drain Tile, Fireproofing Tile, Load Bearing Tile, Silo Blocks, Hollow Building Blocks and Common Brick.

FOUR FACTORIES

Watsontown Brick Co.,

Manufacturers of

Shale
Building Brick

Vitrified Paving and Sewer Brick

Watsontown, Penna.

The Thomas Moulding Brick Company

Twelfth Floor, Chamber of Commerce Building
Washington and La Salle Streets, Chicago, Ill.

EXTENDS the compliments of the season and a cordial wish that 1915 will bring prosperity to all its friends in claycraft.

AT ITS OFFICES and salesrooms a comprehensive display of good brick and good brickwork may be seen, the line including many of the best known makes of face brick in both smooth and rough surfaces and of "Tiffany," the **guaranteed** enamel brick.

IT ALSO MAKES high grade fire brick and solicits correspondence from clayworkers who use refractories at their plants.

The Thomas Moulding Brick Company

The Denver Pressed Brick Co.

Manufacturers of

ALL COLORS OF

FACE BRICK

219 Temple Court Building
DENVER, COLO.

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building
Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

Homestead Face Brick

A true Colonial product which pleases the most fastidious taste

The Farr Brick Co.
CLEVELAND, O.

Chicago is a Great Brick Market

L. D. BINYON, President
H. L. MATZ, Vice-President
JAS. A. HOGAN, Sec. and Treas.

S. S. KIMBELL BRICK CO.

Facing Brick, Mortar Colors
Raggle Blocks

Main Exhibit and General Offices
304-306 CHAMBER OF COMMERCE BUILDING

Branch Exhibit and Salesroom
738 SOUTH MICHIGAN BOULEVARD

CHICAGO

Is Your Product Represented?

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

TRADE MARK
Belden Brick
CANTON, OHIO

The Best Face Brick Made
Five Factories—All Colors

The Belden Brick Co.
Canton, Ohio

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.
Manufacturers of Enameled Brick Exclusively.
Factory South River, N. J. General Office, 1182 Broadway, N. Y.

Chestnut Ridge Brick Company
7-9-11 West 45th St., New York

Dealers in
HIGH-GRADE FACE BRICK

Bradford Pressed Brick Company
Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.
Write for "RED" Catalog.

The Euclid Builders Supply Co.
High Grade Face Brick
and
Builders Supplies

Offices and Display Parlor
6th Floor Leader-News Bldg. Cleveland, Ohio

"The Best in Facing Bricks"

Four Different Textures

THE BEAVER CLAY MFG. CO.
NEW GALILEE, PA.

Brick
Face Brick, Mill Brick and Hard Burned Common Red Brick

Capacity 50,000 per day

Freeport Clay Products & Min. Co.
Freeport, Pa.

Hy-tex

The Standard of Quality in Brick



General Hallway in Saint Louis Exhibit Rooms

HERE is a glimpse of the new Exhibit Rooms at our St. Louis office. It suggests something of the possible variety of face brick, both in color and texture, which we manufacture. With our branches and representatives, you can find any kind of face brick you want for any purpose.

We wish to co-operate in every way we can with all who are interested in developing the more general use of brick throughout our country, not simply as a business program but as the best means of securing the most desirable, the most fire-resistive, the most economical, and the most artistic forms of architecture.

We extend a cordial invitation to all manufacturers and distributers of clay products to make us a visit here at St. Louis or at any of our branch offices.

HYDRAULIC-PRESS BRICK COMPANY

SAINT LOUIS

BRANCH OFFICES AND EXHIBIT ROOMS: Baltimore; Chicago; Cleveland; Davenport; Du Bois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

GETHMANN BRICK CO.

Makers of Standard Dry Pressed Face Brick, red in color, both square and round edge.

Also dark colored glazed Face brick.

Samples sent prepaid on request.

GLADBROOK, :: :: IOWA

Meacham & Wright Brick Co.

Office and Exhibit Rooms
1603-6 City Hall Square Bldg., CHICAGO

DEALERS IN

Facing Brick
Enamel Brick Floor Tile

FIVE STOREHOUSE TELEPHONE RANDOLPH 7420

Established 1889

F. B. HOLMES & COMPANY

Exclusive Jobbers in

Face Building Brick, Paving Brick
Fire Brick
Terra Cotta, Roofing Tile

710 Penobscot Bldg.
Detroit, Michigan

Minglewood Coal Co.

DEALERS IN

Coal and Builders' Supplies
Face Brick a Specialty

"Tell Us Your Wants"

WOOSTER, OHIO

Our "Red Velvets"

A Dark Cherry Red Sand Mould Face Brick

It has that pleasing Soft Velvety Effect given by no other Brick

Write for our Prices

The Indiana Brick Company
Anderson, Indiana

S. A. Morman & Co.

GRAND RAPIDS, MICH.

Face Brick

Builders' Supplies

"NAVAJO" BRICK

The Kansas Buff Brick & Mfg. Co.
Buffville, Kansas

Sales Offices in all the Principal Cities

A. B. Meyer & Co.

Manufacturers--Agents

Face Brick

GENERAL OFFICE AND DISPLAY ROOM

17-19 North Penn Street
Indianapolis, Ind.



Mr. Brickmaker!

Please be careful
Not to say or write

"TAPESTRY"

Unless you mean

FISKE!

ASTRID S. ROSING
Harris Trust Building, Chicago
Clay Products of Superior Quality
Sewer Pipe—Flue Lining—Hollow Tile
Fire Brick—Drain Tile

USE
FACE
BRICK
F. R. UPTON
808 Union Building
WHOLESALE NEWARK, N. J.

SPHAR BRICK COMPANY (Inc.)
Manufacturers of
RED PRESSED
SAND FACE (Colonial)
COMMON
BRICK
MAYSVILLE, KENTUCKY

Wisconsin Brick Co.
Manufacturers of Common Brick
Dealers in Face Brick
and
Fire Proof Building Materials
24 Vroman Blk. Madison, Wis.

The
Shorey-Willis Brick & Supply
Company
"Shor-Wil" Brick
Distributors of Best Facing Brick
W. H. Willis, Pres.
D. C. Shorey, Sec'y & Treas.
Display Parlors
Second Nat'l Bank Bldg.
CINCINNATI

Wynn & Starr Co.
Manufacturers of
Face Brick and
Clay Products
Trafford, Pa.
Manufacturers of TRAFFORD REDS

The Toronto Fire Clay Company
MANUFACTURERS OF
Toronto Ironspot Face Bricks
AND
Toronto Paving Bricks and Blocks
FACTORIES:
Toronto, Ohio.
Empire, Ohio.
GENERAL OFFICE,
Toronto, Ohio.

York-Penn Brick Company
Dealers in
Face Brick and
Clay Products
B. J. CUMMINS, Manager
S. A. & K. Bldg., SYRACUSE, N. Y.

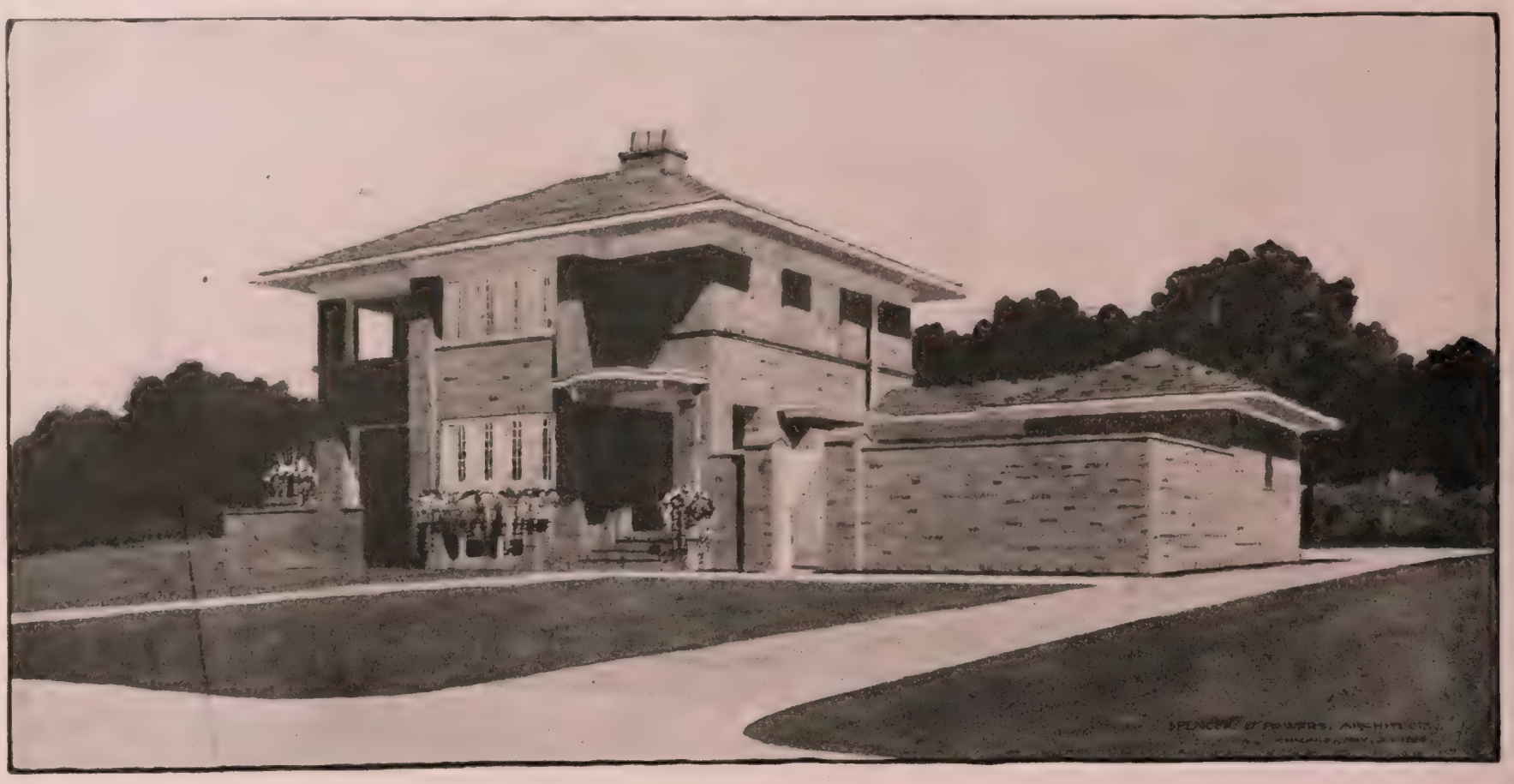
Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Anti-Fired—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press. Bk. Co., Indianapolis.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Anti-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Shale-Tex—Streator (Ill.) Paving Brick Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago, Ill.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis, Mo.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.



This is the House That the Clay Products Industry Are Building at the Panama-Pacific International Exposition.

To the Clay People of the United States and Canada

GREETINGS!

The House and Garage are being built at San Francisco.

Before the next issue of "Brick and Clay Record" a full statement of what has been done and what is planned will be mailed to the clay people of the country. At the same time an appeal will be made for funds to properly maintain the Exhibit during the life of the Exposition, and to take advantage of the unlimited publicity opportunities that we can use. The amount of publicity we get will depend upon the financial support that is given us. Bear in mind that this is not a local San Francisco, or California, or Western Campaign. It covers the whole United States and Canada. Every clay man in America will benefit. People from all parts of the country will learn that a fire-resisting home can be built at a moderate cost. The fact that those who **manufacture** and those **who sell** brick are co-operating with the members of the Bricklayers Union who **lay** brick, to increase the use of the material that gives us all our bread and butter, is a unique situation which is bound to create discussion in the public press. This will start people thinking. We all know that the great field for increasing the use of brick is wherever homes of moderate cost are **not** being built of brick. We know that brick construction is cheaper in the end, but we want the public to know what we know. This is our great opportunity, and if we take advantage of it we shall prosper. If all who will profit by the increased use of clay products are willing to contribute their share of the cost of this publicity we shall have a fund that will stir the country from the Atlantic to the Pacific.

The lumber people appreciate what our campaign means to them and are organizing for defense. Let us stand together like a wall of brick. The Exposition opens Feb. 20th. Respond promptly when the appeal reaches you. Until we know how much you are willing to do for us, we cannot plan how much we can do for you.

PANAMA-PACIFIC CLAY PRODUCTS ASSOCIATION

CHICAGO, ILLINOIS

This Plant Uses Brown Pyrometers



The National Drain Tile Co., Summitville, Ind., has three Brown Recording Pyrometers keeping a constant record of the temperature of any three chambers of their Continuous Kiln. Is it any wonder that they turn out such high grade drain tile when they are able to burn all their tile at exactly the correct temperature? Well operated plants using Brown Pyrometers are successful; while out-of-date plants are failures.



The Brown Instrument Co. **Philadelphia, Pa.**

New York Pittsburgh Chicago

The A-B-C of Cost Saving

Anderson's Brick Conveyor System

Eliminates the Wheelers and Truckers, the Most Uncertain and Annoying Labor on the Yard. How Much It Will Save You Depends Upon Your Output and the Amount You Are Now Paying for the Class of Labor it Replaces.

IT WORKS IN MIDSUMMER AND WET WEATHER, WORKS JUST AS HARD THE DAY AFTER PAYDAY AS THE DAY BEFORE, SHOWS UP STRONG MONDAY MORNINGS AND MORNINGS AFTER HOLIDAYS. THE BEST FRIENDS WE HAVE ARE THOSE WHO HAVE INSTALLED OUR SYSTEM FOR PUTTING GREEN BRICK INTO THE RACKS.

Send us a description of your yard, the location of your machine, the distance from center to center of racks, the number of racks and their length, also stating whether they are two or four-pallet racks, we will then submit you our price or we shall be pleased to visit you and look your plant over and can convince you that the A-B-C-

Anderson Brick Conveyor System

will improve your brick 100 per cent as it does not jar nor shake them at all; and will cut your cost more than half.

Our first system

Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men.

The Mormon Coolie Brick Works of La Crosse, Wis., says:

"It is the best investment we have ever made and we would not be without it. In fact, do not think we would have been able to make any brick this season if we had not had the Anderson Brick Conveyor System, as labor is very scarce here and we have been short of men most of the time."

Our last system

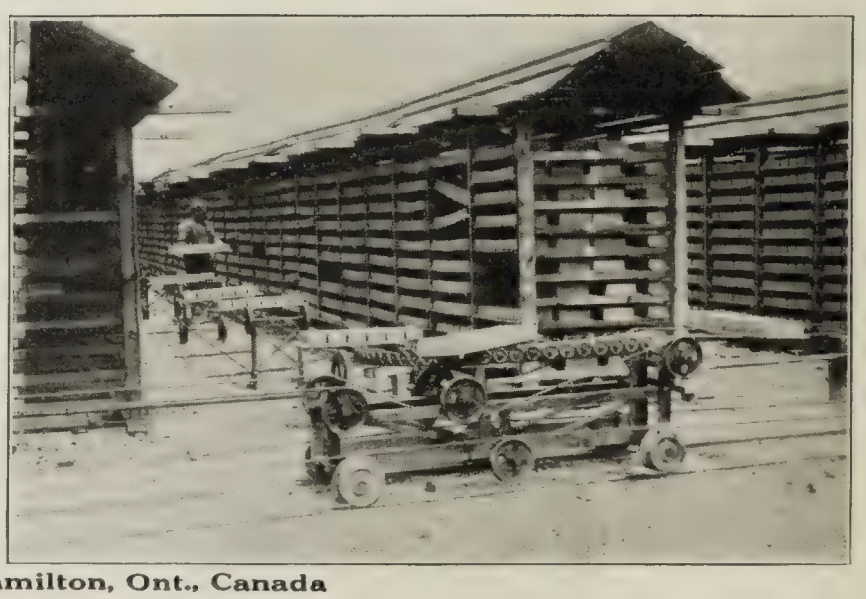
The Donnelly Brick Co., New Britain, Conn., says:

"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"

This System Works When Other Yards are Tied Up for Labor or Bad Weather

20 systems in operation and they are all more than pleased with them





Geo. Frid Brick Co., Hamilton, Ont., Canada

The only Brick Cable System With Corner Turns Pat. May 2, 1911

Marinette Iron Works

Marinette, Wis. C. J. Anderson, Proprietor

The only Automatic Dump Table for Brick Yards Manufactured Pat. Nov. 24, 1908

Begin Reducing Costs at the Clay Pit
Use A THEW—It Pays



You can load enough clay for 250,000 brick with one man and a Thew Shovel.

Made in six sizes. Operated by steam or electricity of any commercial voltage.

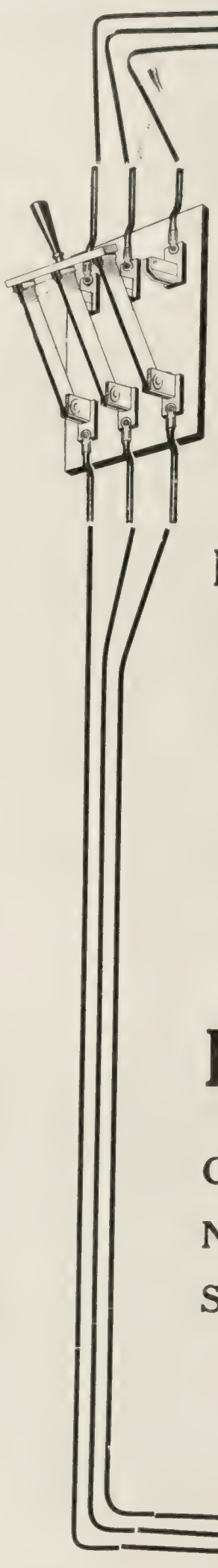
Type 0—18 tons; 5/8 yd. dipper for ordinary clays, 100,000 capacity.
Type A-1—24 tons; 7/8 yd. dipper for ordinary clays, 150,000 capacity.
Type 1—32 tons; 1 3/8 yd. dipper for ordinary clays, 200,000 capacity.
Type 2—35 tons; 3/4 yd. dipper for ordinary shales, 125,000 capacity.
Type 3—40 tons; 1 3/4 yd. dipper for ordinary clays, 250,000 capacity.
Type 4—55 tons; 1 1/4 yd. dipper for difficult shales, 200,000 capacity.

These outputs may be materially increased by adding a fireman and a laborer.

The Thew is Standard for Brickyards. 300 Brick Manufacturers now using Thew Shovels.

Write for Catalogue "A."

The Thew Automatic Shovel Co.
Lorain, Ohio



Could Any Motor Starter Be Simpler Than This?

It is All You Need for the Fairbanks-Morse Internal Starter Motor

Just closing a switch anywhere in the line starts the motor at nearby or distant point. It is ideal for simplicity, convenience and safety. Starts heavy loads with small current, hence is favored by power companies because ***it does not cause line disturbance.***

Ask for particulars.

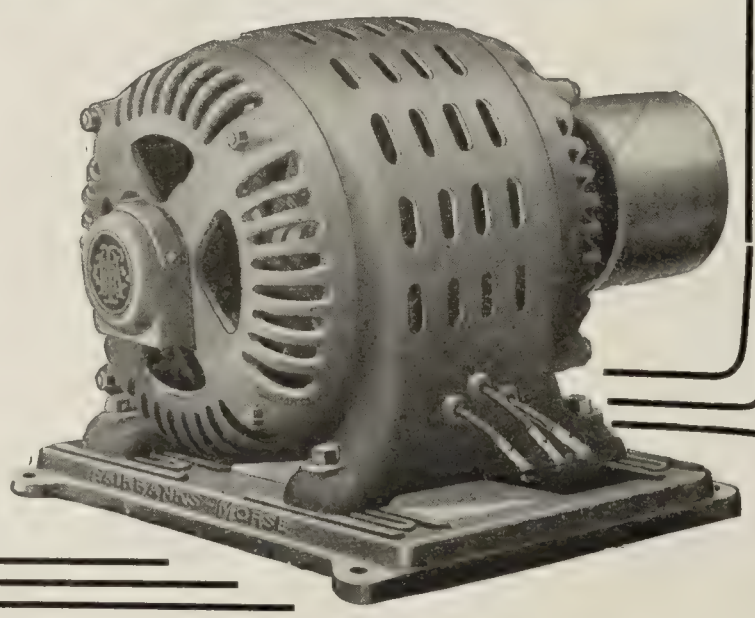
Fairbanks, Morse & Co.

Chicago

New York

San Francisco

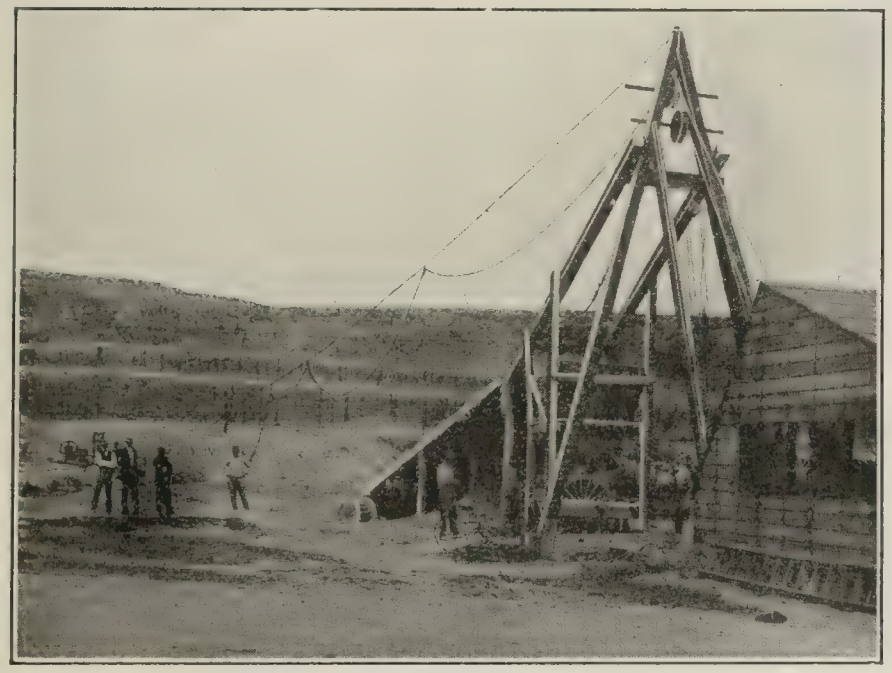
and Other Leading Cities



1243-7J

Solving Your Clay Digging and Delivery Problems

This is an actual scene of a Schofield-Burkett Excavator in operation. It tells its own story of how this machine solved the clay digging and delivery problems, in Hudson River Clay, for the Jova Brick Works, Rosston, N. Y.



A letter received from this concern, at the time they were installing a second one of our machines, and referring to the old one still in use, says: "The Old Reliable up on the hill works like a charm, and certainly has saved us a lot of money."

Here is the Record: It **loads** about **300 yards** of tough clay per ten-hour day. A 75-h.p. motor supplies the power. This is proof that

The Schofield-Burkett Excavator

is a simple, practical, economical solution of your problems in the clay digging and delivery line. Needs no industrial cars and track. Will dig and deliver any kind of sand, gravel or clay to your conveyors or hopper, 100 to 600 cubic yards per day.

We have many other satisfied users. Read the following letters:

"The machine purchased from you last May for digging and moving clay from bank to machine has been doing the work very satisfactorily every day since. It has done for us all that you claimed for it, and has done all the work formerly requiring three double carts and eight men."

Wilson Brick Co.
9/17/14 Wilson, Conn.

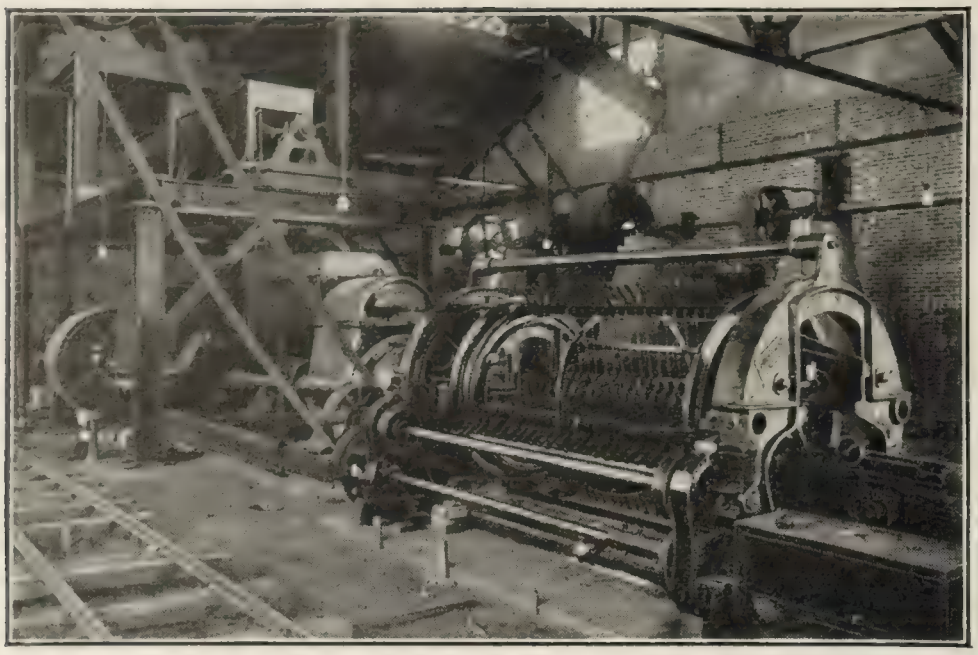
"We are in receipt of your favor of the 25th inst. asking how the excavator works, which you installed for us about two months ago. We take pleasure in advising you that it is giving splendid satisfaction, and is certainly a wonderful little machine. It has already fulfilled every claim you made for it. We consider it the greatest money saver we have on our plant, and are pleased to give it our unqualified endorsement."

Spahr Brick Co.,
6/26/14 Maysville, Ky.

Send for Catalog No. 10. It tells you how and why this machine will best solve your digging and delivery problems. We are ready to positively guarantee results.

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia

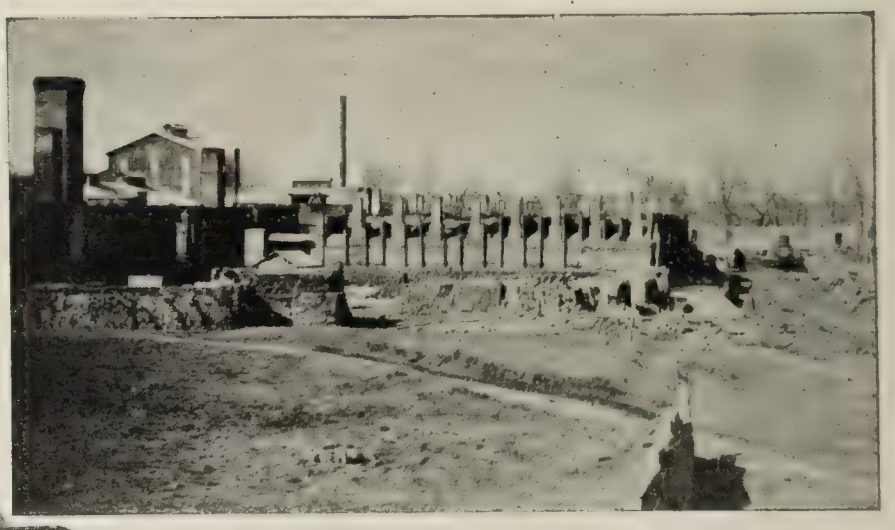


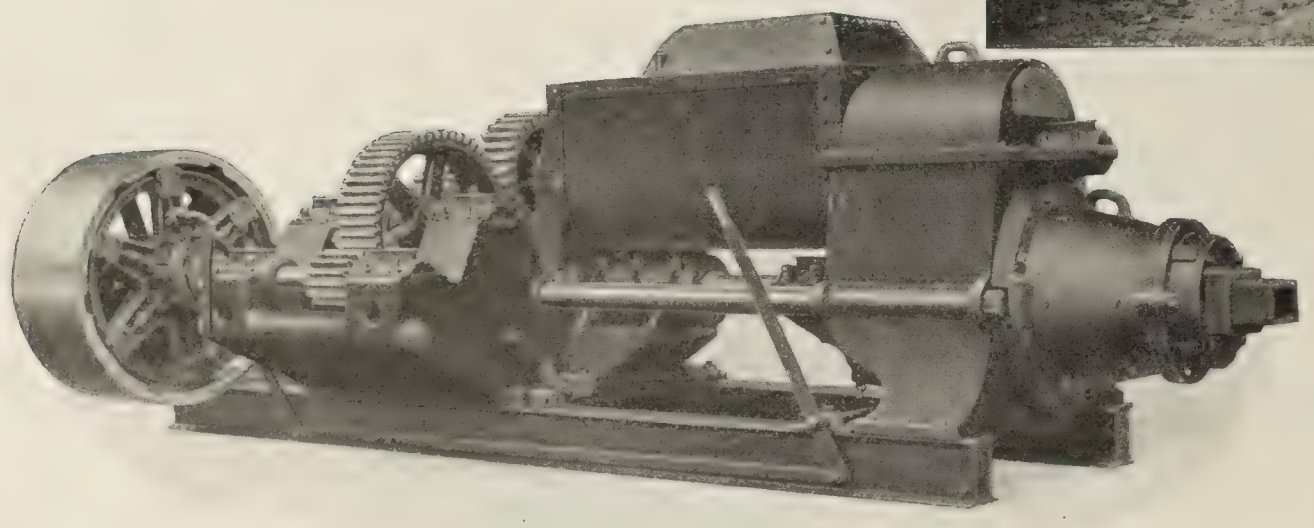
INSTALLATION OF CANTON SPECIAL BRICK MACHINE AND ROTARY AUTOMATIC CUTTER

Our Leather-Bound Pocket Memorandum

For 1915 Is Ready

Ask for Your Copy and Mention This Ad





"CANTON SPECIAL" BRICK MACHINE

Steel Cut Gearing

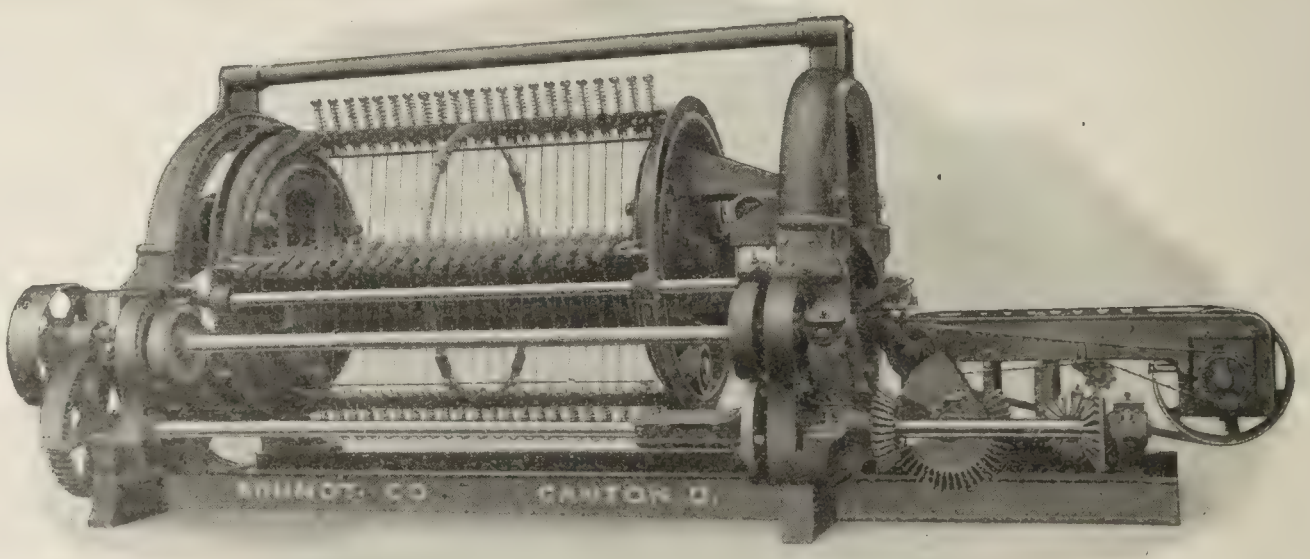
Main Gears 12" Face

Small Pinion Will Last 3 to 5 years

Nothing Wears Out But the Augers

A Rotary Cutter Which is Free From Trouble

No. 20 Catalog Describes Complete Line of Machinery



THE BONNOT COMPANY

CANTON, OHIO

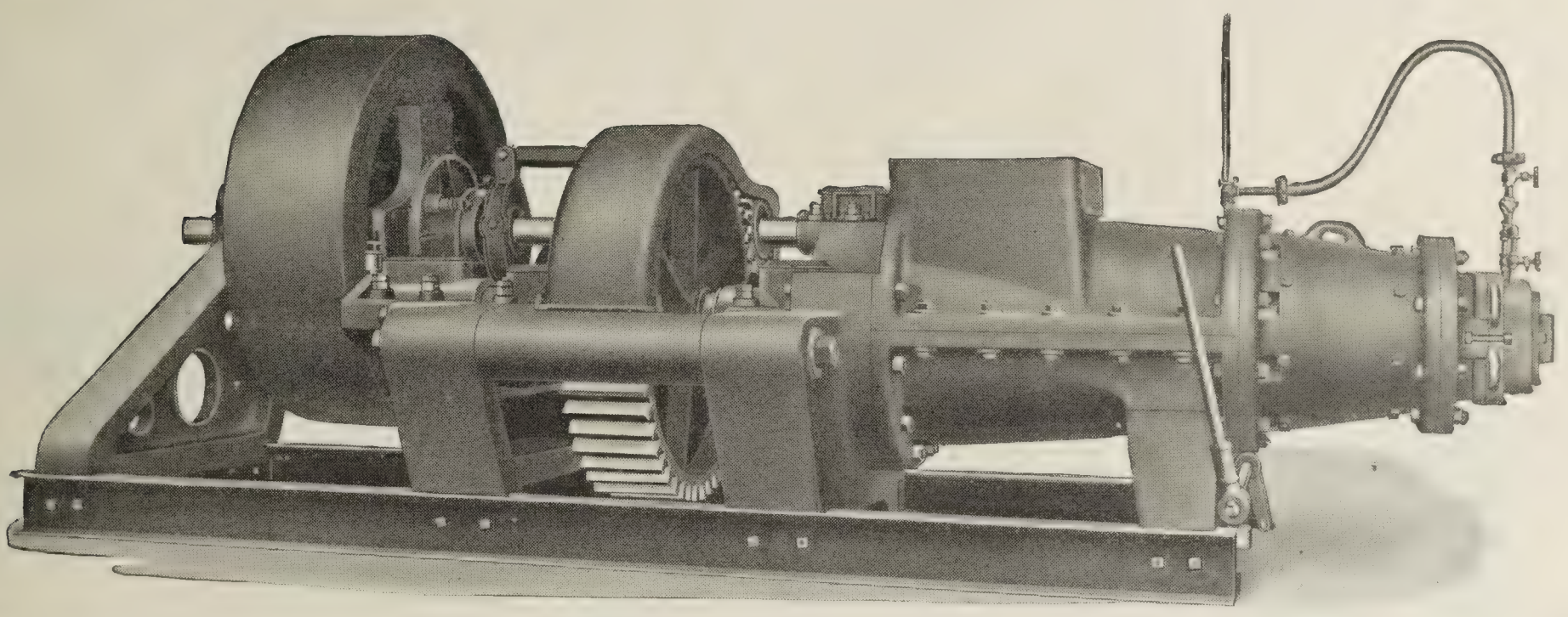
909 N. Y. Life Bldg.
KANSAS CITY, MO.

211 Higgins Bldg.
LOS ANGELES, CAL.

Think of This When You're Down

It's when you're "down for repairs" that the accessibility of a brick machine counts. When you want to keep going—when the orders on your books insist that you do keep going—it's then that a quick-repair machine shows its real value.

The next time you're down for repairs take this cut of the GC with you and watch your mechanic work. Watch him make the changes, align the shafts and rebabbitt. Then figure how much more quickly he would have done it—how much sooner you would have been running—had he been working on the Model GC Machine.



Model GC Auger Brick Machine

Only two gears to wear—neither running faster than 125 R. P. M.

Only two shafts to align—every bearing right before you.

A detachable thrust bearing that can be rebabbitted or the sleeve renewed without disturbing any other bearing.

Every wearing part renewable—easily reached and quickly repaired.

E. M. FREESE & CO.

130 South Street **GALION, OHIO**

Dependable Machinery of Proven Efficiency

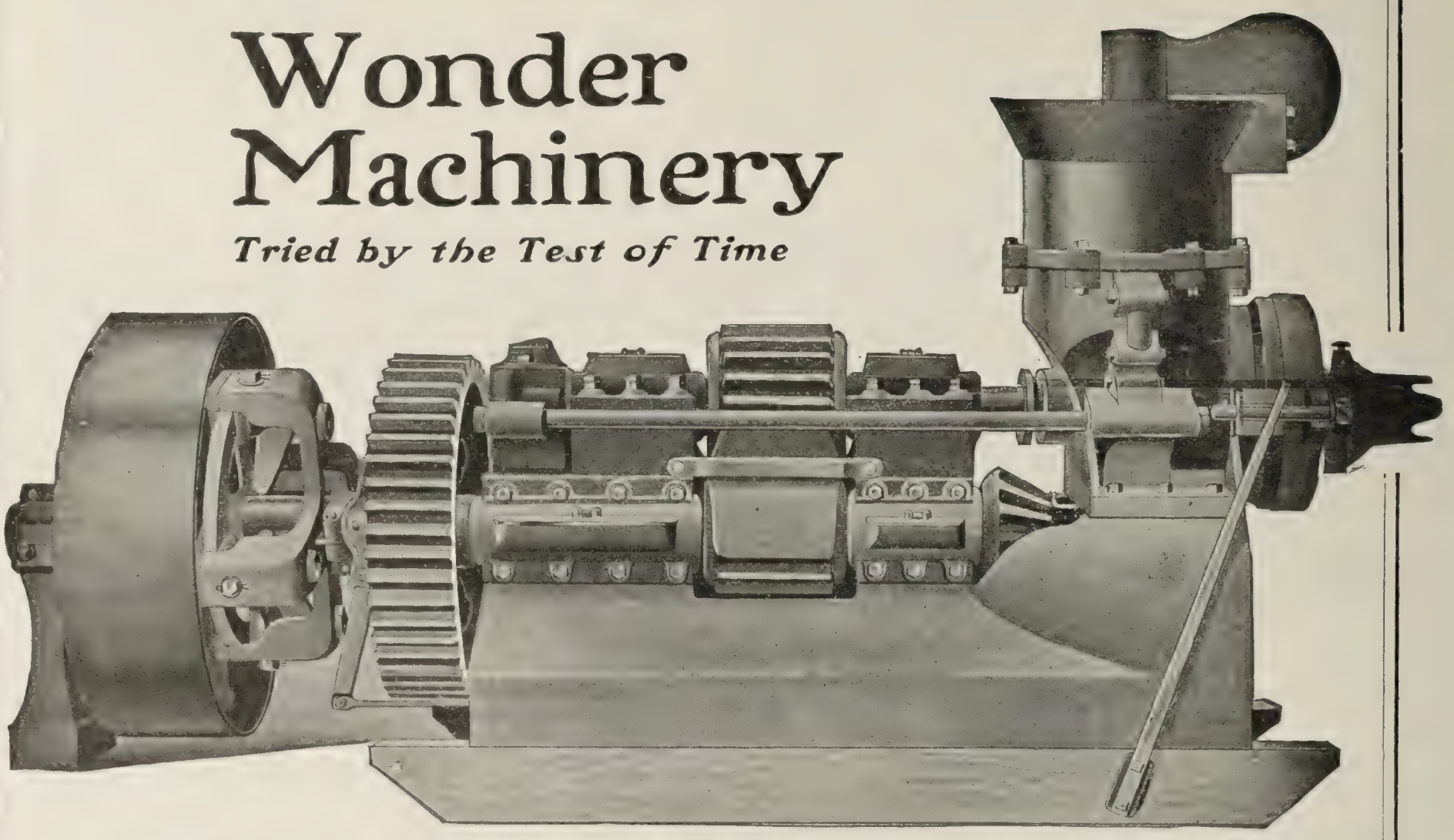
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



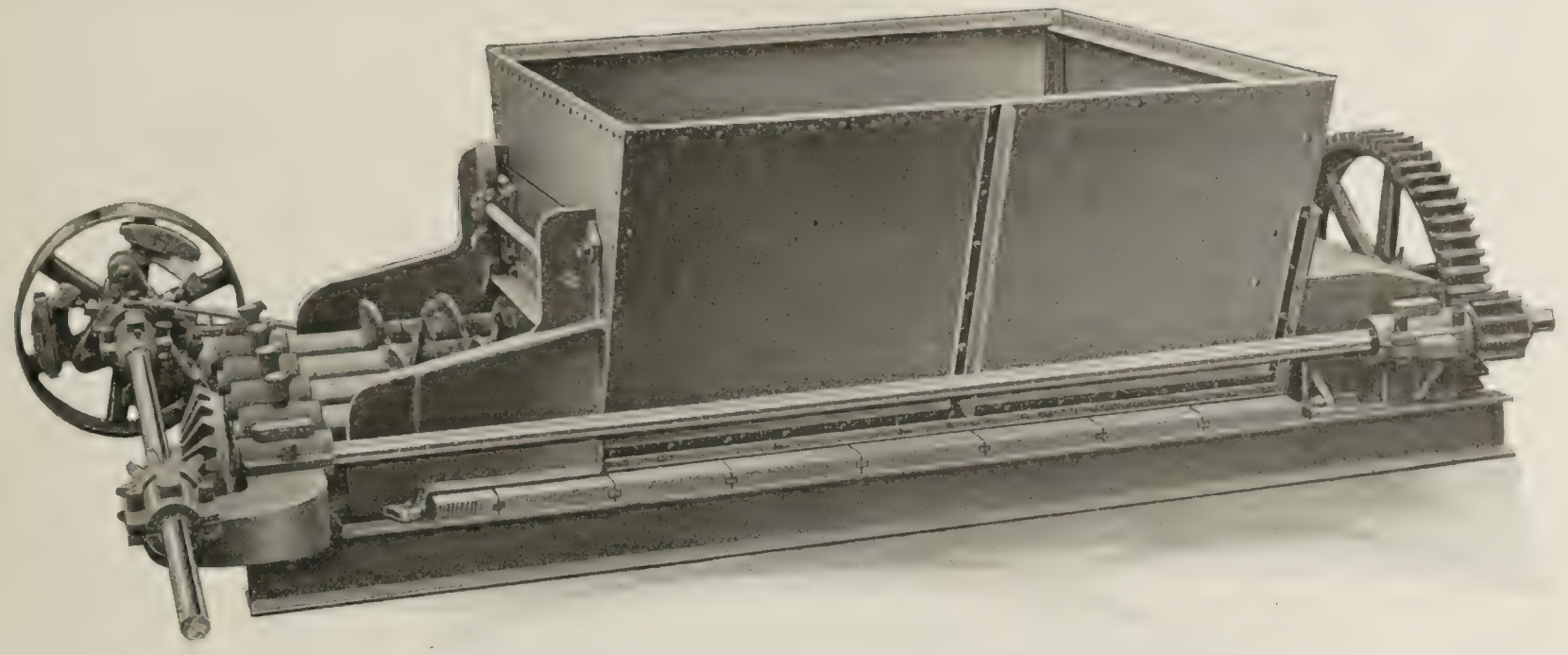
Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

The Efficiency of Your Entire Plant Depends on an Even Feed



Steele's Even Feeder

THIS machine has been in use for three years and has demonstrated its great advantage in saving labor, evening load on machinery and regulating capacity. Users say they pay for themselves in a short time. It is a simple, strong and heavy machine, runs very slow with very little wear. Ordinarily requires only 3 to 5 H. P. Feed is easily regulated by hand wheel not shown in cut. Weight, 6,500 lbs.

¶ The driving gears are enclosed and running in oil; all gears are heavy. Made in both spur and bevel gear drive, as may be desired. In the first case the Friction Clutch Pulley can be fitted on either end, in the second case (shown in cut), the Friction Clutch Pulley can be fitted on either side, therefore can be properly installed under any condition.

¶ Spirals are chilled, giving long life, and can be easily replaced by removing one bolt in the spur gear type and five bolts in the bevel gear type.

¶ The hopper, into which the clay is dumped, holds 2¾ yards and is arranged for an extension to hold any amount desired.

¶ Will save the labor of from one to three men.

¶ Designed with full knowledge of requirements and previous experience in this line.

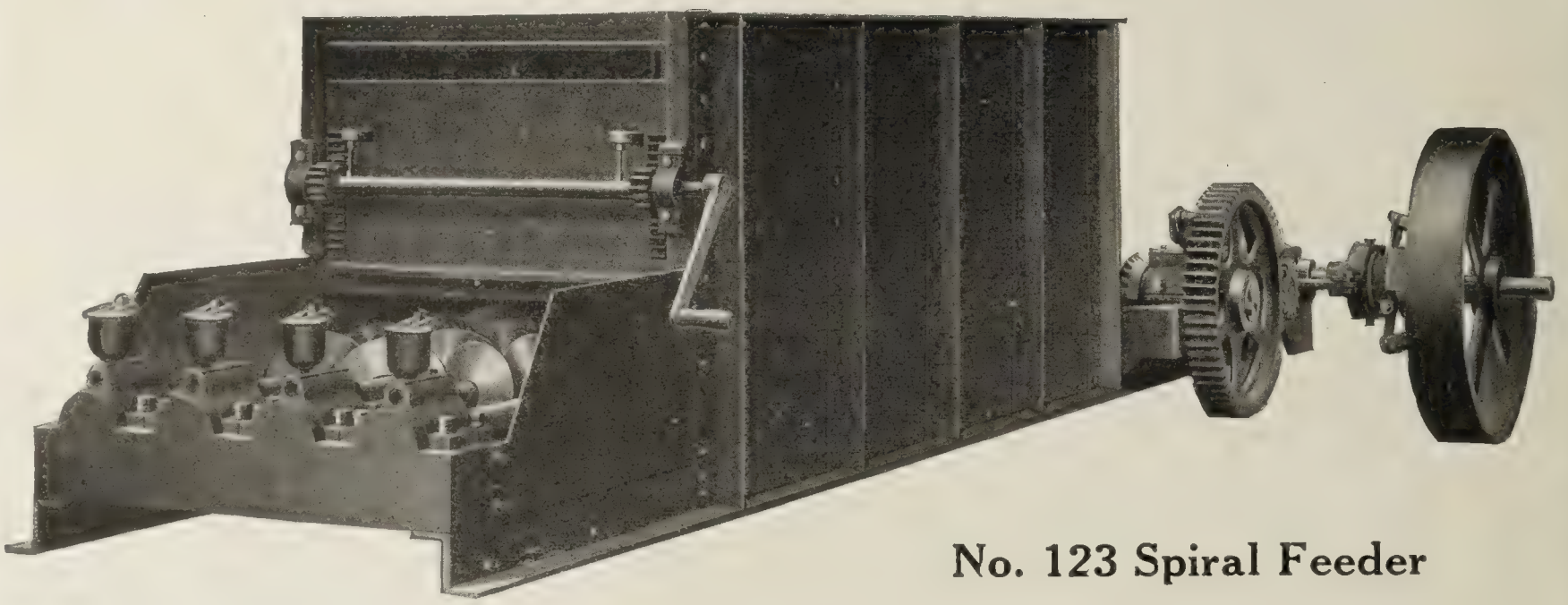
¶ Watch the remarkable results being secured by the use of Steele Machinery.

J. C. STEELE & SONS, :: Manufacturers of :: Brick Making Machinery

STATESVILLE, N. C.

IF MARKED BREWER IT'S GOOD

Compare the specifications of this Spiral Feeder with those of any other and you will quickly see why it is better. Take these items for example. Weight, 5,700 lbs. Spiral shafts 3 in. dia. Intermediate shaft 3 in. dia. Pulley shaft 2½ in. dia. Compare weights and specifications when you compare prices.



No. 123 Spiral Feeder

All Brewer Machines are rigid and heavy. Sometimes they may *seem* higher in price, but if you will look into their construction you will easily see that they represent *greater value* for the price than any other line.

Ask For Catalog

H. BREWER & COMPANY

Tecumseh, Michigan

KING MIDAS

Had he owned and operated a Paving Brick Plant, or any other kind of clay products plant, at the time he received his proverbial golden touch, he would not have had to exercise his power, if he had operated a Powell Patented Shale or Clay Planer.

The remarkable saving in cost of getting in shale or clay, would doubtless have satisfied Midas, so that he would have put his touch on some other part of the plant other than the bank.

Know the Arbuckle first



For proof of the above statement, ask the man who operates one.

Having his raw material **cut up into fine pieces** and **automatically loaded into cars** for haulage to storage bin, at a very **small cost per ton,** is an item which would be very much appreciated by most manufacturers.

Advantages which follow the above results are: **Reduction of wear and tear on Dry Pan from one-half to three-quarters; the saving of all pit laborers, with the exception of one,** who is required to operate the Planer; **a perfect mixture of the bank from top to bottom;** a saving of all explosives formerly used; **increased capacity** and **better product.** These are also items which the manufacturer would appreciate.

The Goose that laid the golden egg every day "did not have anything on" the Powell Patented Shale and Clay Planer; built in sizes to handle your proposition from a two-foot surface clay bank to a hard shale bank 100 feet high. Any capacity delivered that is required.

Correspondence Solicited.

ARBUCKLE & COMPANY

EXCLUSIVE MANUFACTURERS

Rushville, Indiana, U. S. A.

Infringements will be promptly and vigorously prosecuted

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—To get in touch with a man thoroughly familiar with clayworking; one acquainted with novelties preferred. Must have some money to invest in proposition and be in position to take entire charge of manufacturing end. Clay equal to the best; no competition; saving on freight rates alone means big profit. For further particulars address: S-W, Box 8, Jackson, Ala. 1-2.

WANTED—An electrical and mechanical machinist. Must understand clayworking plant, particularly adjusting dies as well as repairing motors. References necessary. State wages required. Address: North Birmingham Firebrick & Proofing Co., North Birmingham, Ala. 1-1.

WANTED—An experienced burner in hollow ware plant, one who also understands the clay game thoroughly. Give experience and references. State salary expected. Address: 1-D, care of "Brick and Clay Record." 1-1.

WANTED — Experienced superintendent for sand-mold brick plant in Wisconsin. Address: The Excelsior Brick Co., Menomonie, Wis. 12-2-3P.

WANTED—Experienced Hoffman continuous-kiln burner. Give references. Address: F. L. Warner, 1902 Union Ave., Memphis, Tenn. 12-3.

WANTED—Good experienced inside foreman for face brick plant. The Alliance Brick Co., Alliance, O. 1-1.

WANTED—POSITIONS.

POSITION WANTED—Gentleman now occupying position as general manager and sales manager of modern brick and hollow tile plant, is desirous of securing similar position, particularly general sales manager, on the Pacific Coast, California preferred. Unexceptional qualifications, business ability and personal references unquestionably satisfactory. Must be a good going concern. Address: 1-C, care of "Brick and Clay Record." 1-4.

WANTED—Position as superintendent or manager of clayworking plant, by ceramic graduate; four years' practical experience, specializing in sanitary earthenware. Employed at present. References furnished. Address: 1-O, care of "Brick and Clay Record." 1-1-P.

POSITION WANTED—Young hustler wants position as foreman of brick plant on Pacific Coast. Thoroughly understands the business, competent to handle men and machinery. References. Address. 1-E, care of "Brick and Clay Record." 1-2-P.

POSITION WANTED—Experienced superintendent in tile and brick manufacture wants position with good company. Have good references and will accept reasonable salary. Address: 1-A, care of "Brick and Clay Record." 1-2.

WANTED—Position as manager or superintendent. Experienced: face, paving, firebrick, holloware. Can get results, flashed and oriental effects. References. Address: 12-BB, care of "Brick and Clay Record." 12-2-2P

WANTED—By capable, experienced man, now engaged, position as superintendent of brick plant. Pacific Coast preferred. References. Address: 1-X, care of "Brick and Clay Record." 1-TF.

MISCELLANEOUS.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

WANTED—SECOND-HAND MACHINERY.

WANTED—Second-hand steam shovel from 500 to 800 yds. daily capacity, revolving type preferred. In reply, state present condition, make, age and where can be inspected. Name lowest price. Address: 1-H, care of "Brick and Clay Record." 1-1.

WANTED—Six second-hand 3-yard side dump Western dump cars. Give condition, price and location. Mexico Brick & Fire Clay Co., Mexico, Mo. 1-1.

WANTED—MISCELLANEOUS.

WANTED—Information regarding good brick or tile plant for sale. C. C. Shepard, Minneapolis, Minn. 1-1-P.

SPECIAL OPENINGS.

CHANCE OF A LIFETIME—At Portland, Oregon. A practical brickmaker, or an investor, can invest $8,000 to $10,000 and share management. This brick and tile plant is modern in every particular, it is new, has abundance of clay, good sales for its products; last year's stock now sold, and over a million brick sold for next season. The best of references. For further particulars write us in care of 1-G, "Brick and Clay Record." 1-1.

CLAY PLANT—Making hollow blocks a specialty. Demand for all that can be made. Shipping 30 to 50 cars per month. Reorganizing. Want practical man with some capital to take complete charge or will sell entire plant. Wonderful opportunity. Jos. Campbell, Monmouth, Ill. 1-1.

FOR SALE—CLAY LANDS.

FOR SALE—Four hundred acre tract of land, located on railroad close to river, composed of fire clay and shale that will make the finest kind of sewer pipe, paving and building brick. Abundance of coal and timber on land with sidetrack on property. Best factory location in middle west. For information write owner, E. N. Peterson, Sterling, Ill. 11-6P

FOR SALE—CLAYWORKING PLANTS.

FOR SALE.

Machinery Used 30 Days, Worth $10,000. Can Be Bought for One-Fourth Value, if Taken SOON.

Whole plant cost $25,000, and can be bought for one-fourth that. Five different kinds of clay, and the best kind of gypsum. Plant could run day and night for a hundred years and not exhaust clay supply. Located eight miles east of Glenwood Springs. Colo.

Four-mold Berg dry press, Raymond 8 ft. dry pan (adjustable sole plate), clay mixer, cup elevator and steel buckets, Standard piano wire screen, No. 2 Daytonian brick machine, automatic cutter, 8 ft. single pugmill, 150 h.p. throttling heavy duty engine, 100 h.p. horizontal tubular boiler for 100 lb. working pressure, duplex pump, spring barrows, dry press trucks, shafting, pulleys, belting and all equipment necessary for operation of plant. Address: 11-BE, care of "Brick and Clay Record". 11-2-1

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington. Ill. 2-TF

FOR SALE—Tile plant doing good business and in splendid location. For particulars address owner: Charles Lee, North Star, Mich. 12-4-P.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—The Ashaway National Bank will sell a controlling interest in the capital stock of the Ashaway Clay Co. for a nominal sum. The plant was built in 1907 and cost about $70,000. On account of lack of experience and capital, it has never run, all told, a full year. The company has just been reorganized with a capital of $35,000 and no debt. It is a thoroughly modern and up-to-date plant with new equipment throughout, consisting of Freese intermediate size brick machine, capacity up to 60,000 brick per day, disintegrator for preparing the clay, Corliss engine with high pressure boilers, waste heat dryer, direct connecting fan and steam coils for auxiliary heater. The equipment for handling clay from the bank consists of tramway and cars with elevated track at plant and winding drum to hoist cars. There is a switch into the plant with depressed track for loading. Ashaway National Bank, Ashaway, R. I. 1-3.

FOR SALE—Brick and tile factory with a fine bank of shale, makes stiff mud brick and drain tile, 3 in. to 16 in. inclusive. Four downdraft kilns with capacity 365 M. brick. Waste heat dryer capacity 112 cars, 500 brick each. Situated on 3 good railroads and within 45 miles of growing city of 250 M. population. This plant is situated in nice town of 3,500 population, with good schools and churches and good farming community. Address: 1-M, care of "Brick and Clay Record." 1-2.

FOR SALE—Brick and tile plant in town of six thousand, location of State Agricultural College. Soft or stiff-mud, open yard for brick, good dry sheds, kilns for tile all in good condition. Fifteen thousand dollar plant for ten thousand dollars. Address: W. C. Corbett, Corvallis, Ore. 1-3-P.

FOR SALE—Large brick and tile plant, doing good business, well located on two railroads. Fine quality of clay—own our own clay beds. For particulars address: 1-B, care of "Brick and Clay Record." 1-2X.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

FOR SALE—Practically new: brick and tile machinery, boilers, engine; Standard steam dryer, and cars. Address: W. E. Lyon & Co., Carthage, Ill. 2-2-TF

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo. 3-1tf.

FOR SALE—Complete set of motors for a hundred thousand capacity plant. Motors all in good order. The Independence Brick Co., Independence, Kan. 12-2-3

Brick and Clay Record Classified Ads Are Result Producers

EQUIPMENT FOR SAND LIME AND CLAY BRICK PLANTS FOR SALE.
Six 6 ft. x 75 ft. dryer cylinders, 150 lb. steam.
Two hundred brick cars.
One 6 ft. x 50 ft. direct heat sand dryer.
Three 5 ft. x 22 ft. Abbe tube mills.
Five 4-mold Boyd brick presses.
Ten 8 ft. Stephens-Adamson mixers.
One 30 in. x 30 ft. belt conveyor.
One 24 in. x 50 ft. belt conveyor.
Four bucket elevators.
One No. 1 Sturtevant mill.
Complete plant for sale, at South River, N. J.
Also includes pumps, boilers, engines, rail, piping, pulleys, shafting, hangers, crushers, dump cars.
Send for complete list and prices which are exceptionally low.

WICKES BROTHERS,
Claremont & West Side Aves.,
Jersey City, N. J. 1-4.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—In first-class condition, only run 1½ years, one 18 in. by 24 in., 240 h. p., 125 R. P. M., 10 ft. by 24 in. fly wheel, complete with base, Atlas engine. One 14 in. by 18 in., 90 h. p., 120 to 150 R. P. M., Chandler & Taylor (complete with base) engine, for direct connection. Both ready to run. Address: 12-BH, care of "Brick and Clay Record." 12-2-2

FOR SALE—Complete equipment or any part for brickyard. Any process. Second-hand. John J. Moroney & Co., 20 W. Jackson St., Chicago, Ill. 1-1.

FOR SALE.

4 Kiln cars, never been used. Price: $20.00 each.

1 turntable, used but slightly. Price: $30.00.

1 rotary hand-power cutter, No. 62, for either side cut or end cut brick, used but slightly, $200.00.

1 No. 150 two shaft granulator.

The above equipment was all manufactured by the American Clay Machinery Co.

1 steam engine slide valve, 14x20, 75 h. p., first class condition, $200.00.

1 50 h. p. horizontal tubular boiler, 3 in. tubes, good condition, $50.00.

1 duplex steam pump, 3¼x3½x5, Carpenter's make.

3 steam traps, 1 Cookson feed water heater and purifier, and 4,000 ft. 1 inch steam pipe in good condition.

Address: 12-BD, care of "Brick and Clay Record." 12-2-3

FOR SALE—Down delivery attachment for Fate machine for making large sizes tile. Scarcely used and a bargain. Carlinville Clay Co., Carlinville, Ill. 11-2TF

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.

Second-hand rails cut to any lengths desired for all purposes.

Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

SMALL ORDERS GIVEN SPECIAL ATTENTION

40, 56, 60, 70, 75, 80, 85 & 90 lb.

RELAYING RAILS
FOR SIDINGS, SPURS, ETC.

8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.

NEW STEEL RAILS
FROGS AND SWITCHES

SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment

RICHARDSON & CO., INC.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

SCHULTZ FRICTION HOIST

Brick Machinery

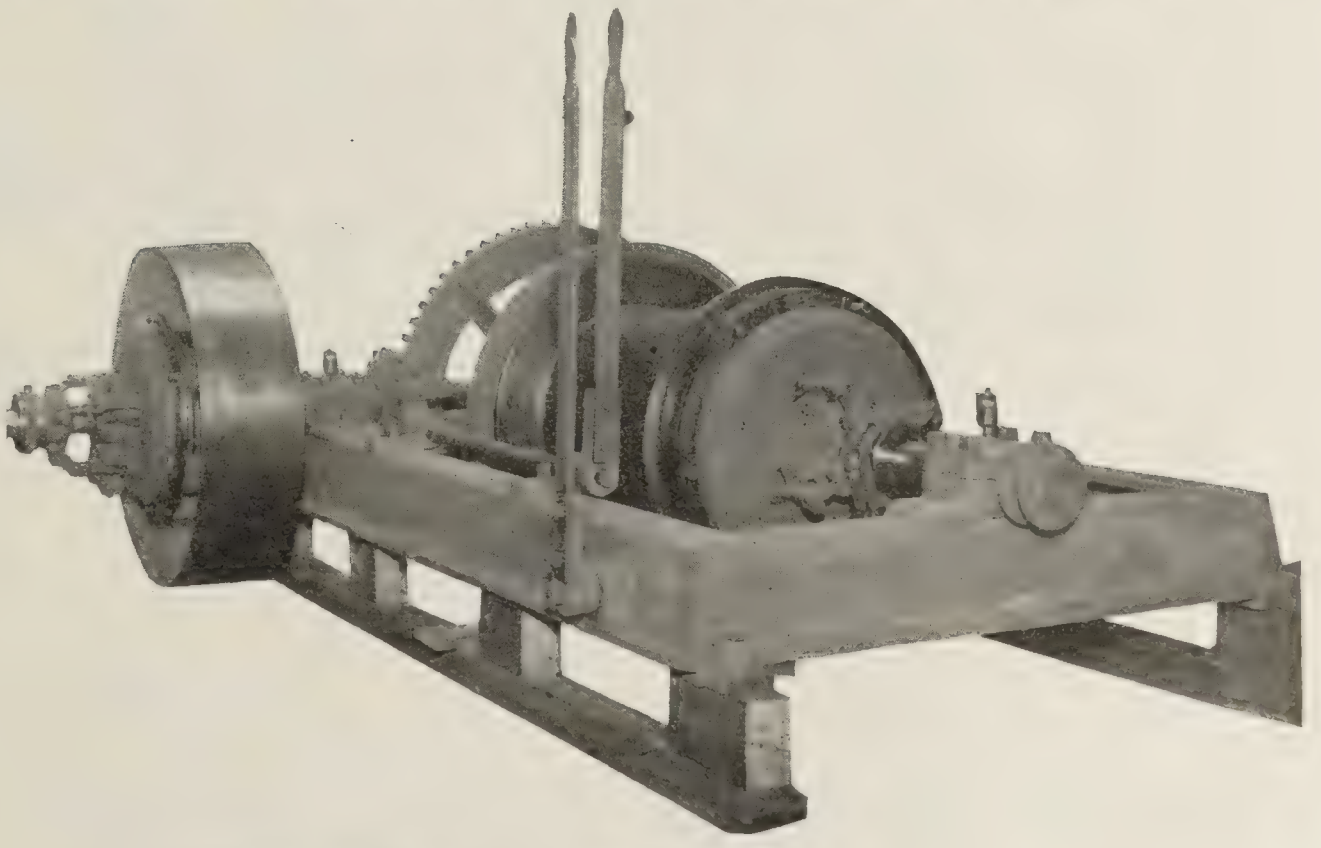
Power Transmission

—

Engines and Boilers

—

Friction Clutches



Furnished with spur or bevel gears

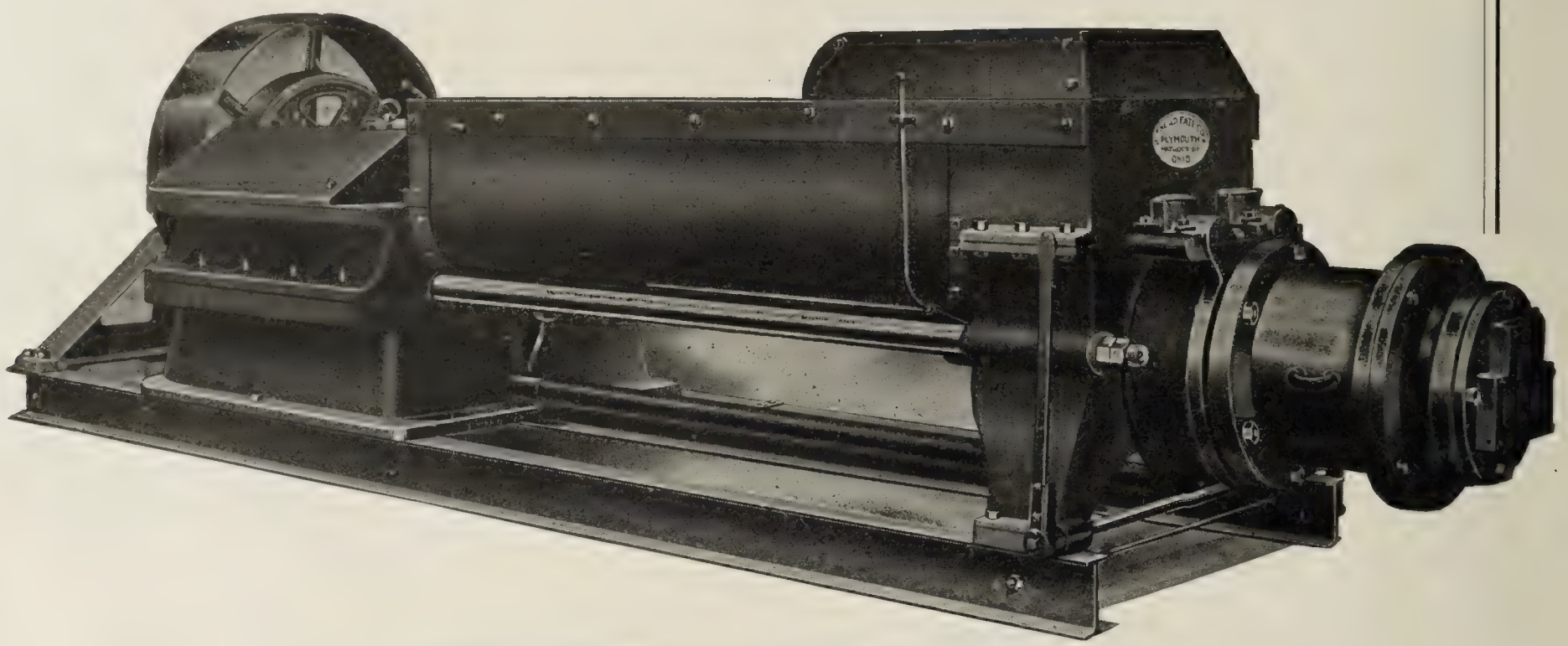
A. L. Schultz & Son, 1675 Elston Avenue, Chicago, Ill.

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

THE PREMIER LINE
THE J. D. FATE COMPANY

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

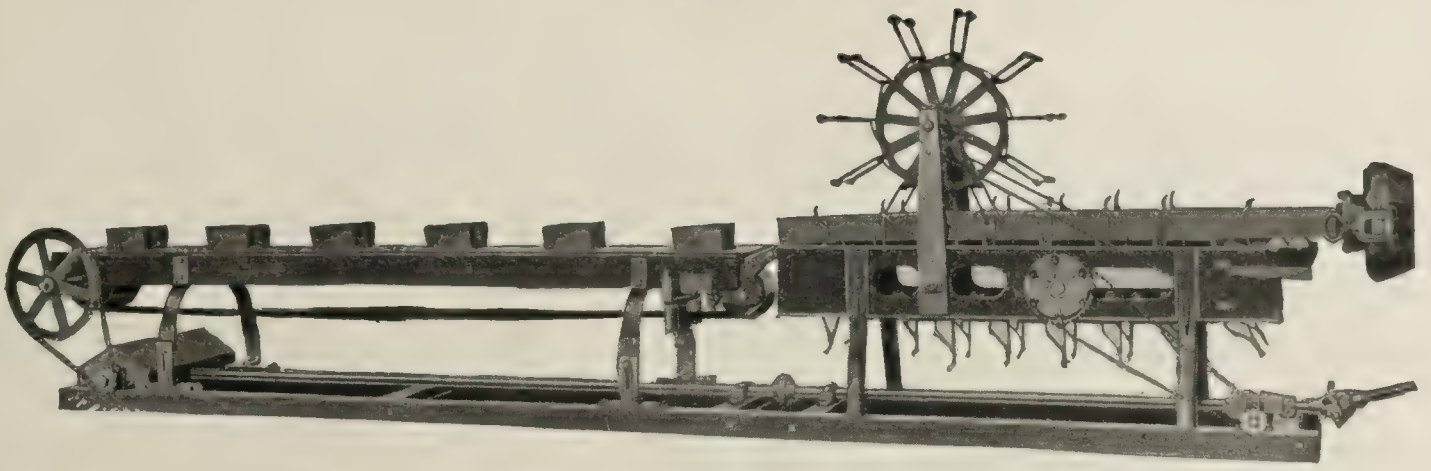
Western Office, 601 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

The Fate Quality

Quality hinges on two things—mechanical perfection and the best of material.

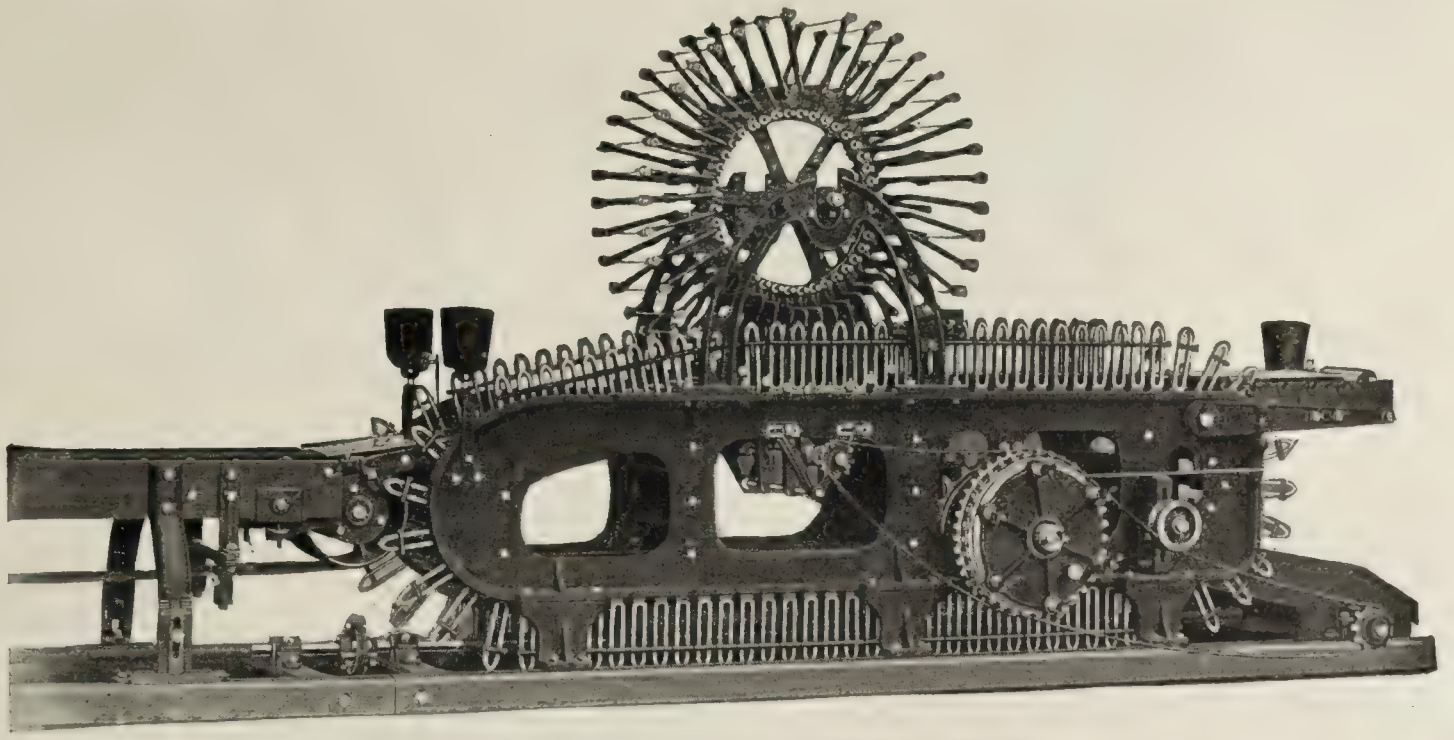
THE PREMIER LINE
THE J. D. FATE COMPANY

These factors enter into the product of the House of Fate.



AUTOMATIC END CUT BRICK TABLE WITH BELT DELIVERY.

The only successful Table so far built for cutting Hollow Brick or Haverstraws. It is also nicely adapted to cutting End Cut Tapestry or Mat Face Brick.



AUTOMATIC SIDE CUT BRICK TABLE

This Table is becoming more and better known as the most successful and economical Table to operate for Side Cut Brick. The Capacity is limited only by that of the Brick Machine and is quickly regulated to meet that.

We manufacture Automatic Cutting Tables for most any purpose desired.

Write us your needs.

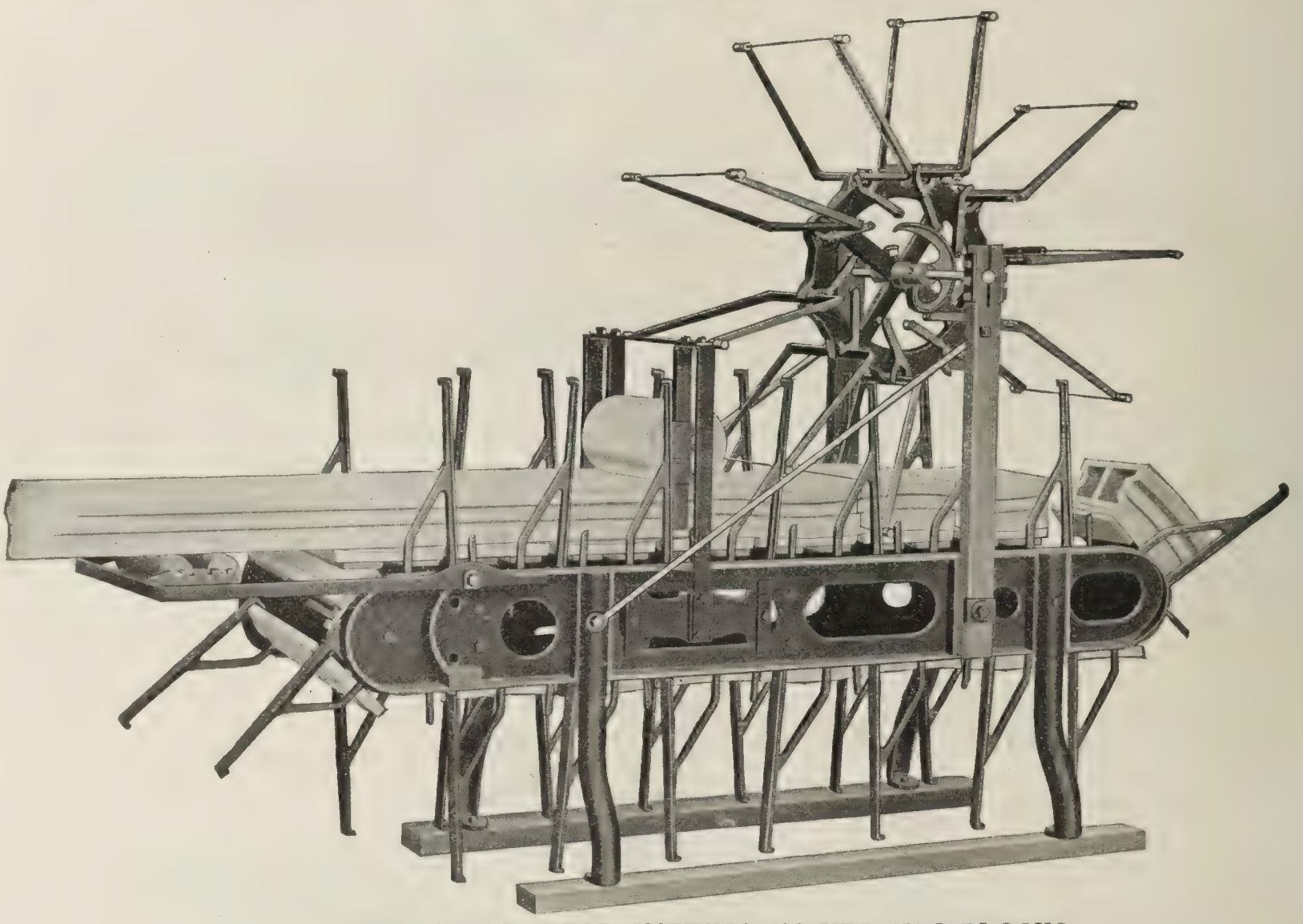
The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Co., Dayton, Ohio, Sales Agents

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



AUTOMATIC TABLE FOR CUTTING CURVED SILO BLOCKS

This table has been developed from our automatic tile and block cutting table, embodying our new reel with cam and friction arrangements, which dispenses with the cutter arm springs and guide pins in the arms. This method insures an absolute straight cut and positive clearance of the cutting wire as it passes back between the platens or the cut ware. Special platens are provided curved to the radius or diameter of the silo in which the blocks are to be used, such as a 10, 12 or 14-ft. silo, or two or more sets of platens of different radius can be furnished for the same table. A special plaster of paris roller mounted over the column of clay, adjustable as to height, compresses the column as it comes from the machine to make it conform to the curve of the platens.

After the column is thus curved, it passes under the reel, where the cutter arms passing down slanting standards, which are of an even number and inclined alternately forward and backward, cut the curved column into blocks, the ends of which are on an angle to the face, each end the opposite of the other and converging toward the concave side. One block then comes from the table with the convex side uppermost and the next with the concave side uppermost, which if turned half way over and laid on edge, end to end with the first block will make a continuous curve, and in this way a complete circle of the desired diameter can be made, with the ends of each block practically squa re with the ends of the adjoining block. This permits of even mortar joints and makes a much more substantial wall than one made up of straight blocks with square ends.

While this table is shown without a friction driving device, it can be furnished with one, when desired.

The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geljsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Co., Dayton, Ohio, Sales Agent.

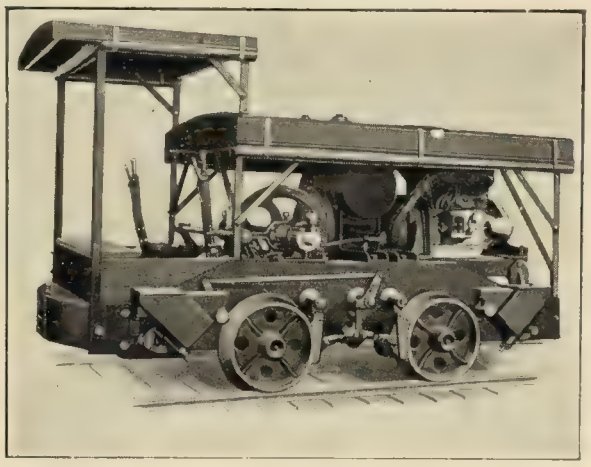
The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.





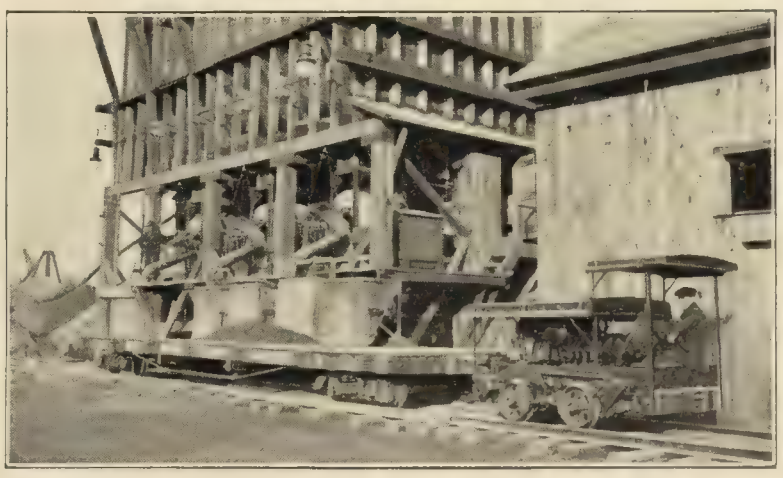


Plymouth Gasoline
Industrial Locomotives

Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.





The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight year old boy who runs one.

The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative

The "TECKTONIUS-VOGT" Kiln

Superiority

Viz.

Efficiency --- Endurance --- Economy

IF YOU ARE SEEKING A KILN

that will save you Time, Fuel and Labor, of Watersmoking, Burning and Cooling,

IF YOU WANT A KILN

that will turn out from 95 to 100 per cent perfect ware every time,

IF YOU CONTEMPLATE BUILDING A KILN

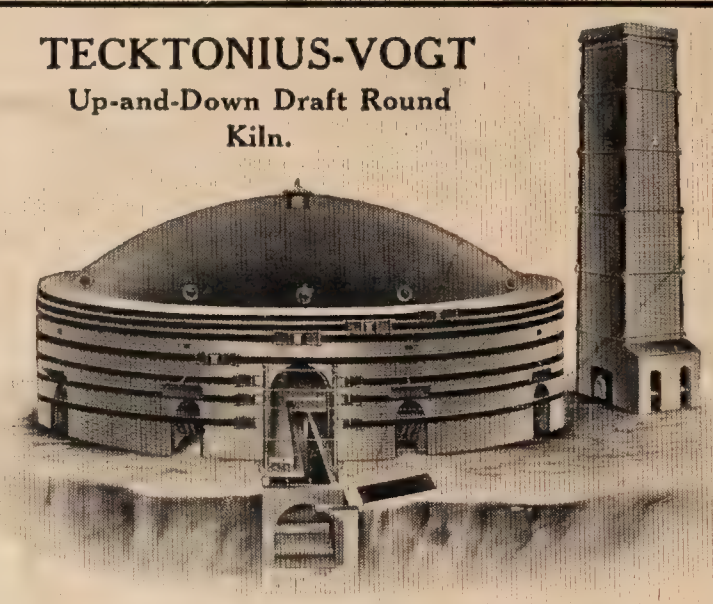
that will eliminate the danger of unequal expansion and contraction of the walls, which causes the crown to crack or buckle,

THEN INSTALL

The "Tecktonius-Vogt" Up-and-Down Draft Kiln.

TECKTONIUS-VOGT

Up-and-Down Draft Round Kiln.



SPECIAL PATENTED FEATURES.

Auxiliary Fire Furnace Used in water-smoking. Heats underground flues at each end of open tunnel—part of heat ascending through opening in center and allowing moisture to escape through hole in crown with up-draft.

Solid Grate Fire Furnace Burns finer and cheaper coal without waste. Makes most effective coking table. Creates intense oxidizing heat. Easiest regulated, most economical firing furnace in existence.

Stack Damper Control Convenient counter-weight draft in stack gives perfect control of direction and degree of heat at all times —thus reducing to minimum chances for underburning or overburning.

Testimonial

Hollywood, Ala.,
March 27th, 1914.

E. C. Tecktonius Mfg. Co.
Racine, Wisconsin.

Gentlemen:

Replying to your letter of the 21st inst.

We are pleased to state that your kilns are giving us entire satisfaction, effecting a great saving in fuel, besides delivering a very high percentage of marketable ware.

The construction of the underground flues and blind bottom is such that the heat is evenly distributed over the kiln without the use of dampers.

If one does not get good results with these kilns, it is the fault of the material or burner, and not of the kilns.

Our kilns were built before you designed the up-and-down draft type, and we are sure that even greater results could be secured with them.

We could not say too much in praise of your Band Fasteners as they are the best we have ever seen. We used home-made fasteners on our first kiln and had to rebuild it in three years. We could not be persuaded to buy anything other than the "Tecktonius."

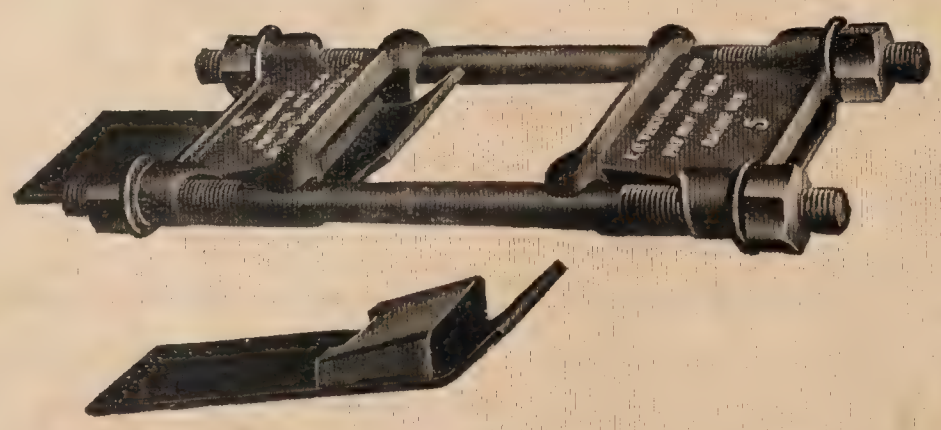
We shall take pleasure in answering any inquiries relative to your kilns or lugs.

Yours very truly,
Alabama Brick & Tile Co.,
W. B. Neher,
Manager.

"Tecktonius" Band Fastener

You wouldn't expect us to know more about your product than you do.

That's your business.



But you would expect us to know more about making Kiln Band Fasteners and other Kiln Iron Equipment.

That has been our business for 25 years. The "Tecktonius" Draw Band Fastener is known the world over as "The Rivetless Lug with the Bull Dog Grip"; the kind that is easy to put on, easy to take off; the kind that is stronger and more lasting than the band itself. Why not use "Tecktonius" and make your kiln construction safe?

Write for Prices and Terms.

E. C. TECKTONIUS MFG. CO., Racine Junction, Wis., U. S. A.

BRICK and CLAY RECORD



Made Expressly

For the BRICK Trade

The most efficient metal for Brick Presses—Dry Pans—General Transmission, etc. *Price 15c per lb.*

The Cleveland Alloys Co.

BEARING METAL EXPERTS

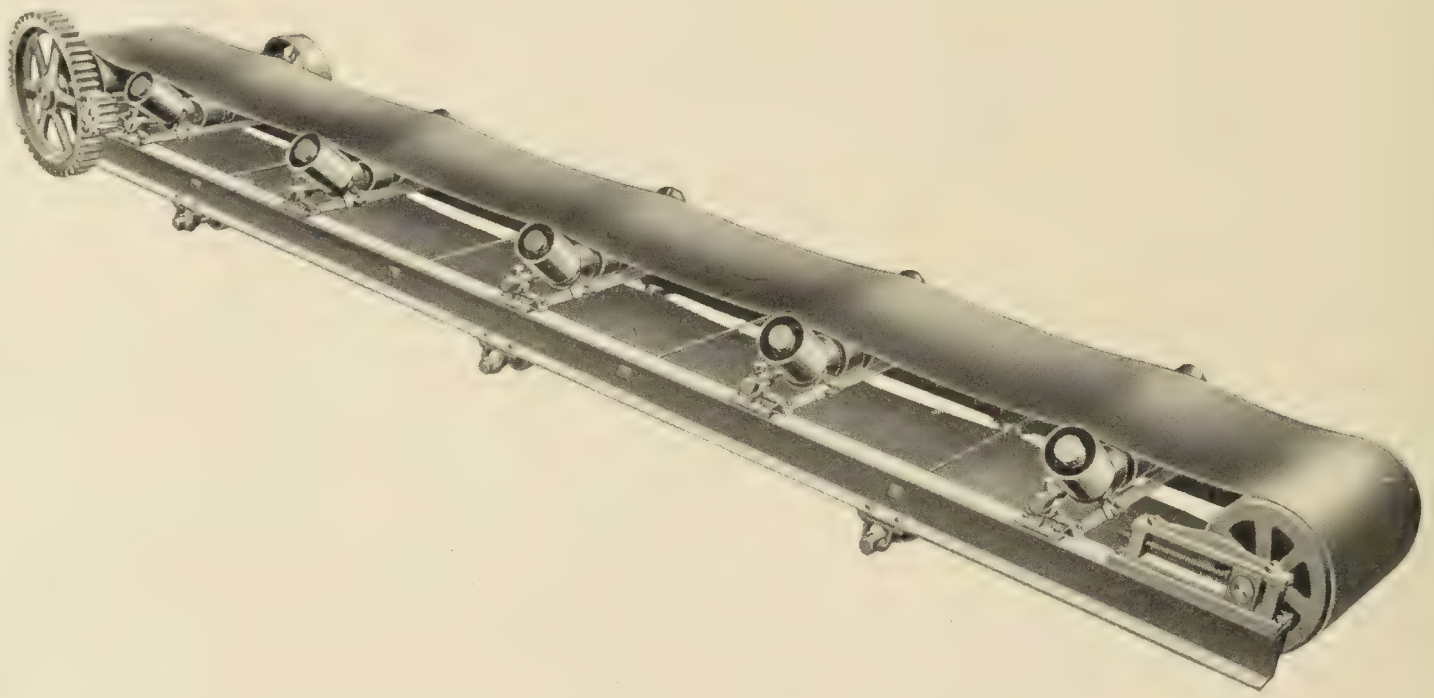
CLEVELAND, OHIO

Vol. XLVI, No. 2. Chicago January 19, 1915.

WELL ER-MADE

BELT CONVEYORS
In Sectional Units

There is no better or more economical manner of handling clay, shale, grog, coal, etc., than by means of Belt Conveyor Systems.



Why not buy these conveyors in suitable sectional units so arranged that they can be assembled complete by simply bolting up at proper points?

Regularly designed for 20 ft. clear spans.

Furnished with walkway on either or both sides if wanted.

Also made with wood frame for use as a field conveyor.

Very reasonable in first cost
Big Saving in installation expense

Catalogue J-20 Describes Our General Line of

Elevating, Conveying & Transmission Machinery

WELLER MFG. CO., Chicago

New York	Baltimore	Akron	St. Louis	Dallas	San Francisco
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Ex.	711 Main St.	316 Rialto Bldg.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

Trautwein DRYERS

Facts—

We sell the highest grade of drying equipment which brains, coupled with experience, can produce.

With that equipment goes the knowledge, acquired during a lifetime, of proper application to the maze of conditions as found on brick yards. This knowledge cannot be bought.

The confidence reposed in us by some of the oldest and largest brick manufacturing concerns is worthy of note.

Can you afford to experiment?

Trautwein Dryer & Engineering Co.

Manufacturers—Engineers

417 South Dearborn Street, CHICAGO

Fire Boxes

On Our Steel Shell Kilns We Have a Wide Range of Fireboxes Which Can be Used, the Box Being Practically Independent of the Kiln (as shown opposite)

Let Us Tell You More
Write Now



A Very Practical Type of Box

Claude Smith Company

Kiln Builders

Plymouth Building, Chicago, Ill.

Service to Clayworkers

A

Albion Shale Brick Co...P- 8
Alliance Brick Co.....P-15
Alliance Clay Pro. Co...P- 8
Alsey Brick & Tile Co...P- 6
Alton Brick Co.....P-11
American Clay & Cement Corp.....P-13
American Enameled Brick & Tile Co.....P-13
American Process Co... 198
Ambursen Co..... 215
Atlas Car & Mfg. Co.... 181
Auburn Wagon Co..... 187

B

Baird Machine & Mfg. Co. 186
Barr Clay Co.....P- 6
Big Four Clay Co.....P- 8
Bessemer Limestone Co..P- 8
Bradford Pressed Bk. Co.P-13
Bonner & Marshall.....P-15
Brighton Fire Brick Co..P- 6
Broderick & Bascom.... 177
Brown Instrument Co... 179
Buckeye Rolling Mill Co. 177

C

Canton Grate Co..... 187
Carlyle Paving Bk. Co.. 10
Chambers Bros. Co..148-184
Chicago Brick M. Co... 188
Chicago Retort & Fire Brick Co.....P- 4
Childs, O. J., Co..... 184
Classified Ads.....221-222
Clearfield Machine Shops 176
Cleveland Alloys Co.... 141

D

Davenport Loco. Wks.. 180
Danville Brick Co.....P-10
Davis Fire Brick Co.....P- 4
Deckman-Duty Brick Co.P- 8
Dewey Bros..... 176
Dodge Mfg. Co..... 176
Dover Fire Brick Co....P- 4
Dunn Wire-Cut Lug Bk. Co.....P- 7

E

Eagle Iron Works..... 179
Eagle Tank Co..... 182
Eastern Machy. Co..... 223
Englehard, Chas..... 178
Evans Clay Co..... P- 4

F

Farr Bk. Co..... P-13
Federal Clay Pro. Co...P- 6
Frink Pyrometer Co.... 176

G

Gandy Belting Co..... 191
General Traffic Assoc... 176
Gerlock, H. W..... 176
Gethmann Brick Co.....P-13

H

Hamburg Vit. Bk. Co...P-10
Harris Brick Co.....P- 8
Hendrick Mfg. Co..... 179
Hinde & Dauch Paper Co. 178
Hocking Valley Bk. Co. P-10
Hocking Valley Pro. Co.P-15
Hook Patent Kiln Co... 189
Hydraulic-Press Brick Co.P-13

J

Jackson & Church Co.. 179

A Trinity of Interests

There is a community of interest between the readers of a trade paper or technical magazine, its advertisers and its editorial staff.

The advertiser buys space because he believes in the buying power of the reader.

The editorial policy is determined by the attitude of the reader—it is governed by a wish to serve the reader.

The reader makes but little distinction between the editorial pages and those that are wholly devoted to advertising.

The impression created by one extends to the other. A weak editorial policy creates a distrust in the statements made by advertisers. Any apparent insincerity on the part of the editorial staff has an effect upon the feeling of confidence that the reader has in both the editorial staff and in the men whose names appear in the advertising.

And, in the same ratio, the value of a paper's advertising is increased by the earnestness of purpose, the desire to assist, the innate honesty of the editorial policy.

"Brick and Clay Record" submits these facts to its readers and advertising patrons, suggesting that they consider the character of the service this paper is giving its readers.

The letter "P" preceding a number refers to the "Pink Section"

K

Keim Brick & Tile Co...P-15
Keller Brick Co.....P-13
Kimbell, S. S., Brick Co.P-13
Kissel Motor Car Co.... 216

L

Lehigh Car Wheel & Axle Works..... 177
Lehigh Portland Cement. 186

M

Main Belting Co..... 145
Manufacturers Eq. Co... 193
Marion M. Fdry. & S. Co. 220
Marion Steam Shovel Co 185
Martin Brick M. Mfg. Co. 183
Martin Grate Co..... 194
Mathews Gravity Carrier 215
Maurer & Son, Henry...P- 4
Mayer Brick Co., C. P...P-10
Mexico Bk. & F. Clay Co.P- 6
Metropolitan Pav. Bk. Co.P-10
Murphysboro Pav. Bk. Co.P-11
Murray Iron Wks. Co... 178

N

N. P. B. M. A.....P- 9
National Roofing Tile Co.P-15
Nelsonville Brick Co....P- 8

O

Ohio Gal. & Mfg. Co... 198
Ohio Kiln Co..... 181

P

Pettigrew Foundry Co... 183
Pittsburgh Tile Mfg. Co.P-15
Purington Paving Bk. Co.P-10

Q

Queens Run Fire Bk. Co.P- 4
Quinn, John.....P- 6

R

Richardson-Lovejoy 178
Roessler & Hasslacher.. 185

S

Sackett Screen & Chute Co..... 192
S. A. F. E..... 219
Sawyer Belting Co..... 217
Schaffer Eng. & Eq. Co. 190
Schofield-Burkett Cons.. 217
Schultz & Son, A. L... 182
Shawmut Paving Bk. Co.P-10
Smith Co., Claude..... 143
Smith, W. W. 218
Soisson Fire Bk. Co....P- 4
Standard Dry Kiln Co.. 197
Sterling Brick Co.....P- 6
Stupakoff Laboratories.. 176
Sturtevant Co., B. F.... 176
Sunset Brick & Tile Co..P-

T

Tecktonious Mfg. Co... 224
Terre Haute Vit. Bk. Co.P-11
Thew Auto. Shovel Co.. 216
Trautwein Dryer & Engineering Co..... 143

U

United Brick Co.....P- 8

W

Webb Wire Works..... 198
Weller Mfg. Co..... 142
Wells-Royse 196
Westinghouse El. & Mfg. 218

LEVIATHAN
BELTING

MAIN BELTING COMPANY
Philadelphia

Chicago New York Pittsburgh Seattle

Represented in Canada by Main Belting Company of Canada, Ltd.
Montreal Toronto

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

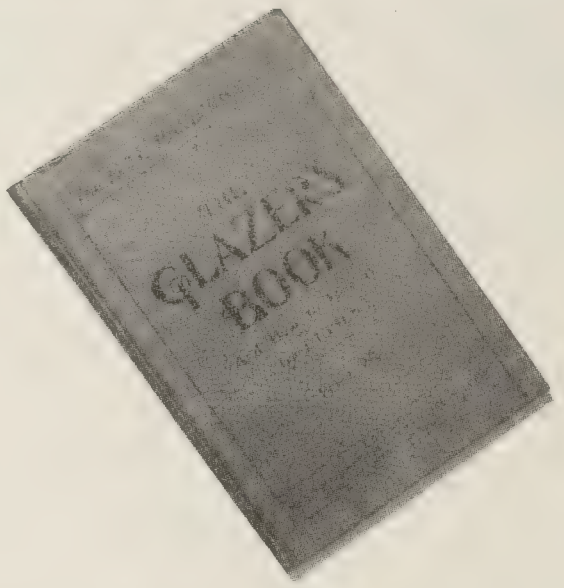
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



139 Pages, 4 3-4x7 1-2, illustrated
Price $1.00

THE GLAZER'S BOOK, by E. L. Raes, has long been accepted as a standard handbook for potters and tile manufacturers, as well as for enamel brick makers. It contains chapters on glazer's "secret" recipes, the materials used, the way to test these materials, the relation of composition and melting point, glazes, bodies and dips, the way to weigh out and mix, and other information that will be of great value. The book is published in London, and presents the British angle of glazes.

It is on sale, through "Brick and Clay Record's Book Department," at $1.00 per copy, postage paid.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy).....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller).....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

Governor Dunne To Welcome Us at our State Capitol

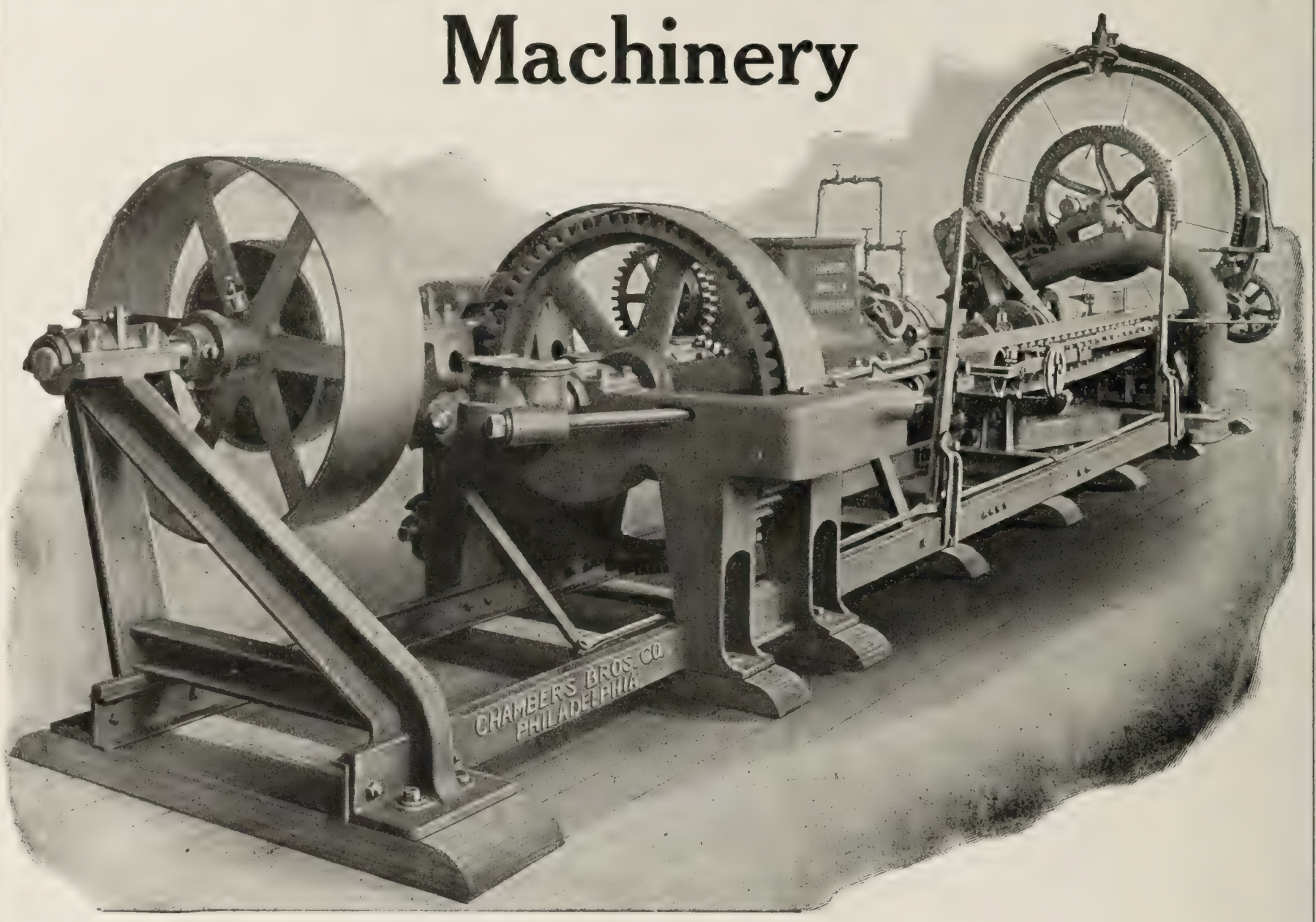
GOV. DUNNE will give the address of welcome at the New Leland Hotel, Springfield, Illinois, where the Illinois Clay Manufacturers' Association will hold its thirty-seventh annual convention, February 8, 9, 10, 1915. The clay men of Springfield, along with the co-operation of the Springfield Commercial Association, are giving their earnest support while a large number of prominent clay manufacturers thruout the state have signified their attendance. With the large attendance promised and a program which will be of material benefit to all, this will be the best convention in years. The first two days will be spent in giving papers and discussion of subjects which are of interest and vital importance to all clay manufacturers. Subjects dealing with cost accounting, insurance difficulties, manufacturing troubles and upon selling.

On Tuesday evening the clayworkers will endeavor to cast aside their many troubles and partake of a bounteous spread—the annual banquet, and with Dr. Converse, a veteran clay man of Springfield, as toastmaster, this feature in itself will long be remembered.

This Is Your Convention--Boost It

A. E. HUCKINS, Secretary :: URBANA, ILLINOIS

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 184)

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, January 19, 1915

Vol. XLVI No. 2

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

Table of Contents

Dayton-Pivot for Permanent Road Projects 165

Iowa Clay Product Manufacturers' Association Convention 152

Saving Dollars by Using Brick 154

Reaching the Farmer 167

Science of Cost Finding 159

The Fire Insurance Contract 163

The Editor's Corner 150

Freight Tariffs and Troubles 173

Letter Box 171

Machinery and Equipment 174

Pottery Notes 190

Questions and Answers 172

Semi-Monthly Trade Review 178

The Superintendent 170

Wake of the News 180

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

IF there be one thing, more than another, which is stopping the tide of prosperity, it is the habit of waiting. For two years or more, we have let this habit grow upon us.

We wait until our machinery falls apart before we order new. We wait to stock up on repair parts until the machine breaks and finds us unprepared. We wait until our option has expired before we make up our minds to purchase. We wait until undoubted "bargains" are beyond our reach before we decide to put any money into them. The past two years have been marked by missed opportunities. Men who have been compelled to sell, owing to a most unusual combination of circumstances, were unable to find purchasers—properties have been ruined.

If the men who had money had not "waited," they would have been in possession of property, today worth twice the amount that they paid for it.

And, at the same time, the man who needed this money so badly, would have made a success with it instead of failure without it.

In two years—maybe less than that—we have gone back from being a forceful, resourceful, self-confident people into being a nation of "watchful waiters"—perhaps taking our cue from the White House.

Buy Now!

What we need is a good "stirring up." Nearly every man needs a lot of it. Some need more than others. Everyone needs some.

If every man who hesitates today about buying an overcoat, a suit of clothes, a pair of shoes, a hat or a necktie—will go right out and buy these things—the clothiers, shoemakers, hatters and haberdashers of the country will avoid receiverships.

These things—the overcoat, the suit of clothes, the hat, the shoes and the necktie—are needed. They must be bought before the winter is over and the chances are that prices will not be any lower on Washington's birthday than they are today. In the meantime, you will have had a month's wear and have avoided, perhaps, a severe cold.

The moment that you—that is you, personally—begin to believe that your interests are best served by going out and buying the things that you need—buying them now and not later—your own—this means you, personally—prosperity will begin.

As you set an example of buying now—not later—others will follow—others will follow just as surely as they are following today, your policy of waiting.

The change that you are jingling in your pocket or the bills that lie folded in your wallet or the pen and ink figures that mean so much to you when they are written on the ledgers of the bank that carries your account—what are these to you but purchasing power?

Of what avail are they if, by the process of "waiting" similar to your own, other men withhold from you the patronage that makes the capital and labor invested in your business lack its proper reward? What right have you to expect other men to order your goods and use them if you in turn are going to buy from hand to mouth?

You know and everyone knows how hard this nation has struggled against "bad times" and has talked "good business" at times when, in many instances, there were no customers in the store to "talk business" to.

Now we have come to the point where "talking business" does not make prosperity.

We have to "do business" if we are to survive. Every man, woman and child in the country is a wheel in the body politic. Each one has a purchasing power.

Each one who limits that purchasing power by putting off "until tomorrow" the purchase

of any commodity which he needs—be it a machine, a piece of property or a pound of cheese—is standing in his own light and putting back the era of prosperity.

Our Wealthy Farmers

Much has been said regarding the splendid opportunity that lies before the clayworker whose product goes, in any great measure, to the farmer.

Grain producers in the United States had, last year, the most profitable year of history.

It was exceptional in many ways, but the war which has involved the most of Europe, has been the principal factor in determining the prices of cereals raised in this country.

The wheat crop exceeded any previous yield by 128,000,000 bushels, the corn crop was fair, the yield of oats well described as "bumper."

In the handling of these vast amounts of grain from farm to seaport all records have been broken and since harvest time there has been an unending stream of wheat and other cereals crowding the avenues of transportation in all sections of the country.

While the war paralyzed the cotton trade for several months and growers of that product have had a series of setbacks, the net results of the crop yield have been close to record proportions, as measured in dollars and cents.

The total value of all of the leading crops, as estimated by the government, was Four Billion Nine Hundred and Forty Five Millions of dollars or about Twenty One Million dollars less than the yield of 1913.

The decrease in the value of the cotton crop was Three Hundred and Seven Millions and, as a consequence, the crop yield of 1914, exclusive of cotton, was worth Two Hundred and Eighty Six Million dollars more than any previous year.

On the first day of December, the government placed the average farm value of both spring and winter wheat at 98.6 cents per bushel—this is the real "dollar wheat" for the farmer gets every cent of it.

With all of the enormous shipments from this country, the needs of Europe apparently are as great as ever. More than one million bushels per day have been the average for several months past and indications are that this quantity of grain will be shipped daily for many months to come.

And the prices that Europe is paying for our grain are more than satisfactory to the "humble tiller of the soil."

The farmer is going to have a lot of money and, since he is possessed of a great deal of good common sense, will spend it, or at least a great part of it, on the improvement of his "plant."

If the clay products manufacturers of the country could have foreseen this farm prosperity and have spent the past year in deluging these farms with literature as attractive as that which flows in steady streams from the offices of the cement manufacturers, burned clay would be in greater demand for farm buildings, silos and the like, than it has been in the past.

And why was it that this farm prosperity was not anticipated? Good crops have been the rule, instead of the exception, and the steady improvement of farm land, through tile drainage, has worked wonders in the productiveness of the prairie lands of the Middle West.

Every once in a while, the manufacturer of burned clay has an opportunity of asking himself a question. The question is nearly always the same and the answer is similar in nearly all cases. The question is: "What have you done to increase your market for burned clay?"

A Paper for Owners

"Brick and Clay Record" urges upon its readers a careful perusal of the article published in this issue, "Saving Dollars by Using Brick." It also suggests that attention be given to the articles by John J. Thomas and Edward E. Sheasgreen.

While not intending to neglect, in the slightest degree, the practical side of the clayworking business, the management feels that these articles, which have appeal for the men whose capital is invested in clayworking plants, should fill a decided want in the industry.

If, in your plant, there exists an impression that "Brick and Clay Record" is a technical paper—a magazine for the man behind the shovel—the man whose hand governs the throttle—it is well for you to take this issue and read it from cover to cover.

It has a message for the man behind the check-book, for the man who directs the thought and action of every employe of the plant.

It is, and Will be, a paper for the Owner.

Progress Marks Convention of Iowa Clayworkers

Strong Program and Unusual Environment Made Amends for Small Attendance at Iowa's Annual Gathering of Manufacturers

CONSIDERING the importance of the gathering and the merit of the papers which were read, it is unfortunate that the attendance was so poor at the annual meeting of the Iowa Clay Products Manufacturers' Association held at Ames, Ia., January 12, 13 and 14.

The convention in reality did not open until the evening of the 12th, only one of the three papers scheduled for the afternoon session being read at its appointed time, due to the tardiness of the arriving delegates. Hon. R. A. Pierson, president of the Iowa State College, gave the address of welcome in the evening, the response being given by the Hon. J. L. Stevens, of Boone, Ia., a veteran clayworker who has become prominent in legal circles. Following Judge Stevens, Frank W. Darling, of the Clay Product Company, of Chicago, talked on "The Marketing of Clay Wares." Mr. Darling's talk was excellent—one, if not the best, given at the convention—and scored many of the harmful practices followed in selling clay products. Mr. Darling also told the convention of the way in which he handles his salesmen, his dealers and his advertising. He strongly urged the need of association work in educating the public in the merits of burned clay.

The morning session of Wednesday, January 13, was given over to the ceramic department of the Iowa State College, which furnished all of the numbers on the program. One of the most interesting subjects and which called forth considerable discussion, was the experiments which are being conducted by Prof. Homer F. Staley on the use of salt in aiding the drying of clay wares. Prof. Staley's experiments along this line are far from being completed, but he hopes to be able to read a paper on this subject before the next meeting of the American Ceramic Society. This session was presided over by Dr. S. W. Beyer, who helped considerably in the discussion following the reading of each paper. The way in which the members participated in these discussions during the entire convention was very encouraging, as they brought out many points which would otherwise have remained uncovered.

The afternoon session of the 13th—the one at which the largest number of delegates was present—was devoted to the consideration of plant problems. The clay pit, the oil engine, fire insurance and many other subjects were thoroughly discussed.

After the adjournment of this session, a small group of delegates, headed by Prof. Staley, made an inspection tour of the ceramic department of the college—a department which, by the way, is said to be the most completely equipped in the United States. The load-bearing ability of two hollow-tile building blocks was tested while the party was there, one block standing 127,000 and the other 123,000 pounds before collapsing. Two six-inch concrete cubes were also tested for load-bearing ability. In one the aggregate was composed of limestone, and in the other, fragments of burned clay. The cube having the limestone aggregate collapsed under a weight of 85,000 pounds, while it required 142,400 pounds to break down the cube in which the aggregate was composed of burned clay. The ceramic department of the college is experimenting on the effect of a burned clay aggregate in the load-bearing ability of concrete, but has been unable as yet to formulate any theory for the burned clay aggregate giving better results than limestone.

The evening was featured by a smoker—a good wholesome meal, the best that the delegates were privileged to enjoy during their stay at Ames, and cigars—and a moving picture show. The meal, which, by the grace of small town etiquette, might be called a banquet, was marked by a good-fellowship spirit, and each table was the center of an informal discussion of local conditions and more personal affairs. The smoker was followed by moving pictures showing the construction of roads in Iowa with convict labor.

The Clayworkers' Institute of the College furnished the program for the morning session of the 14th. Very interesting and instructive papers were read by Prof. Staley on "Physics and Chemistry of Burning Clays," and Prof. A. Marston on "Sorting Drain Tile to Conform to Quality Tests." The afternoon session was opened by reports from the secretary and treasurer and from the various committees appointed during the convention, followed by the election of officers. The remainder of the afternoon was taken up by the reading of various papers, the first being, "Advertising to Reach the Farmer," by Edwin G. Zorn, associate editor of "Brick and Clay Record," in which it was proposed to the convention that a publicity and educational bureau be formed by the association. This paper brought forth much interesting discussion on the subject of advertising clay products, especially to the farmer, a motion being passed that the president appoint a committee to consider the advisability of establishing such a bureau, with power to act. This paper was followed by one on cost determination, after which the convention adjourned.

The exodus of a large proportion of the delegates on the evening of the 13th and the continued departure of others on the 14th, left a rather small audience for the papers and other business transacted on the closing day, so that much of the benefit of the program on that day was lost to the members of the association.

The comparatively small attendance at all of the sessions indicates either a belittlement on the part of the members of the importance and value of these annual gatherings or that the association is hiding its light under a bushel and has not kept its own publicity department busy working up enthusiasm among its members.

The expense incurred in attending these conventions is far too low to be a factor in denying the good which can be obtained from listening to the papers and discussions, and from meeting and talking with fellow workers in clay. There is not a delegate who attended the Iowa convention who could say that he was unable to take some idea, some thought home with him, the application of which to his plant or selling organization would bring far greater returns than the few dollars expended in attending the sessions; yet there

was a trifle more than one-half of the membership present, and among this number no doubt were included many who would profit greatly by attending. It may be that other attractions had a bearing on the attendance, but the annual meeting of the Iowa Clay Products Manufacturers should overshadow in importance all other considerations to the clayworkers in Iowa.

Canadian Program to be Unusually Attractive.

The Canadian National Clay Products Association has prepared a program for the 1915 annual convention which should bring every clay products manufacturer who operates in the Dominion, to the meetings that will be held in Toronto, January 26, 27 and 28. Special arrangements have been made for the ladies who will accompany the delegates, and it is expected that more than a sprinkling of the fair sex will be noted when the sessions are called to order.

The secretary, Gordon Keith, will be in Room "F" at the King Edward Hotel during the morning of the 26th to receive dues and direct the members as best he can. His room will be the "Bureau of Information." The mayor of Toronto will deliver the address of welcome on behalf of the city, and "Dan" Lochrie will outline some of the good things his committee on entertainment has planned for the members and guests. In the evening a "free for all" theater party has been arranged, and on this occasion, moving pictures of brick construction will be shown through the courtesy of the American Clay Machinery Company.

Papers will be read by prominent ceramists and practical clayworkers, and will be followed by discussions that should bring out some very helpful suggestions and experiences. Another theater party is scheduled for the second evening, when all those registered at the convention will be guests of the Toronto entertainment committee. Thursday morning and afternoon will be devoted to papers by prominent and interesting speakers, whose subjects have been chosen with great discrimination. In the evening, a banquet will be served at the Prince George Hotel. Members will pay, but ladies are the guests of the entertainment committee.

Canadian Free List on Fire Brick.

A new customs law went into effect in Canada, on November 20, 1914, which admitted certain classes of fire-brick into Canada, without the payment of any import duty. Under this law, the following are rated as of a class or kind not made in Canada:

(1) Rectangular fire brick. Ordinary 9 in. x 4½ in. x 2½. in, valued at more than $16 per M. at place of export, the estimated weight of each of such brick being 6 lb. 3 oz.

(2) Other rectangular brick of fire clay, not more than 9 in. long, nor more than 4½ in. wide, nor more than 2½ in. thick, valued at more than 23½c per 100 lb. at place of export.

(3) Key brick for arches of smelting or reduction furnaces.

(4) Neck brick for smelting or reduction furnaces.

(5) Edge brick for smelting or reduction furnaces.

(6) Magnesite fire brick.

(7) Silica fire brick when composed of not less than 90 per cent silica.

New Kansas Brick Scores Success in Chicago

COINING names which are to be used as trade names or trade marks for brick, has become a fine art. One of its highest achievements, seemingly, is that of the Meacham and Wright Brick Company of Chicago, which has chosen the compound word "Verd-Antique" for the trade name which it applies to the brick which is especially made for the Chicago concern by the Kansas Buff Brick and Manufacturing Company, at Buffville, Kans.

"Verd-Antique," to accept Webster's definition, is a "green incrustation on ancient copper and brass coins; a beautiful mottled marble." This double definition is a very close description of the actual appearance of this brick and the accompanying illustration can only give an idea of the texture—it is impossible to reproduce the color.

It is doubtful, in fact, whether the color could be reproduced even if color plates were used, because there is an evanescent play of light and shade which seems necessary to bring out the full beauty of this particular kind of face brick.

G. S. Bowstead, a man who was formerly connected with the manufacture of face brick and who has but recently gone into the selling end of the business, is devoting the greater part of his attention to the sale of "Verd-Antique" brick in Chicago. As he puts it, he has "made this brick a pet hobby," and since its unusual color offers a puzzle to nearly every mason contractor who considers it, a puzzle, that is, as to what shade of mortar is required, Bowstead is following all of the Meacham and Wright Brick Company's operations, where this brick is being used, and giving the mason contractors his personal experience.

The "Verd-Antique" brick is highly vitrified, and its structure shows that it is a combination of red burning shale and fire clay, ground very coarsely. It is very dense and the greenish tone which appears on the surface is not in any way an efflorescence, as it is burned into the brick to a depth of from one-half to three-quarters of an inch. It would appear as though the Kansas Buff Brick and Manufacturing Company had a gold mine at Buffville, and that one of the veins, at least, ran right through the shale or fire clay deposit.



The New "Verd-Antique" Face Brick.



Gardner Read.

Saving Dollars

Fire Insurance Experts Show Where a Comparatively Few Dollars Expended in Brickwork Bring Back Rich Dividends in Lower Premium Rates on Business Structures

FIRE insurance premiums are based on fire hazards. The greater the exposure the larger the premium. At every hand is found some point in building construction where brickwork, acting as a stop against the spread of a fire from one building to another, makes the hazard, so far as one building is concerned, less than it is in another. This brickwork earns money for the man who pays for its erection, in the form of a lowered premium that, in many cases, equals the outlay in a few years. It is one of the best forms of investment known.

By Gardner Read

AMERICA is fast becoming a much-taxed country. We have a war-tax on drugs and perfumes—a war-tax on express receipts and telephone messages, an income tax—the latter being a luxury that is not altogether general.

But one tax which we all pay, and which we will continue to pay so long as we act upon the lines that have guided us in the past, is the tax that comes to us through fire-losses.

It is idle to point out how every man pays a part of this; you know that fire-insurance rates are based upon fire-losses—that fire prevention and fire-protection are maintained because of the lessons taught by past fires.

The fire loss in the United States, in 1913 was $204,000,000 and, in 1914—$235,591,350. The cost of maintaining fire-departments, water-works, fire-prevention bureaus, fire-marshall's offices and the like, runs into, approximately, $500,000,000 more.

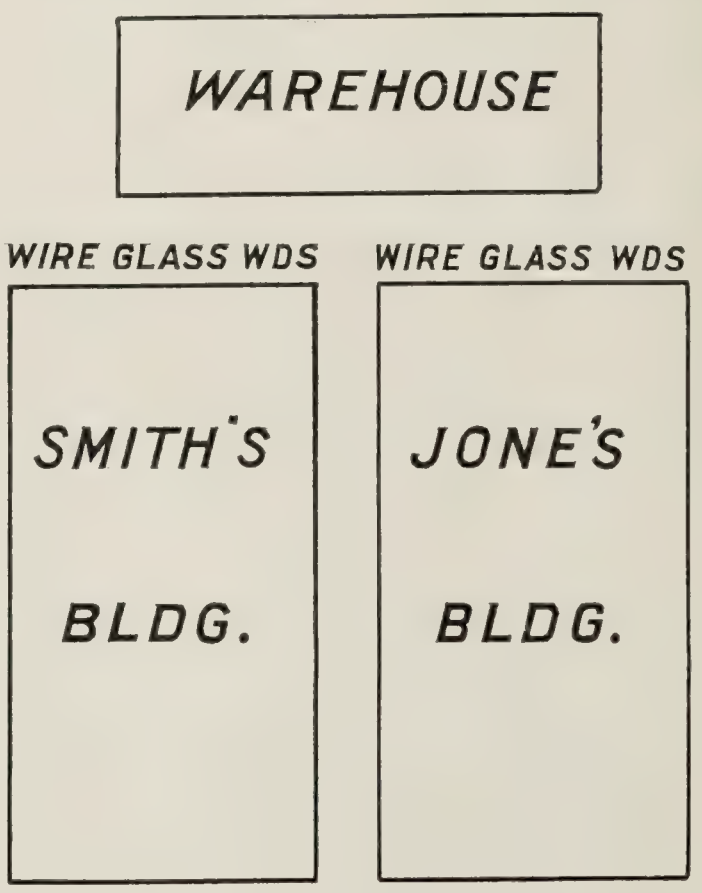
The cost of this is distributed, in taxes and in insurance premiums, in increased selling price of commodities—due to insurance cost—and in other ways, so that every man bears his part of the burden. Anything that can be done to reduce the fire-loss will reduce the tax. Anything that reduces the tax puts money in our pockets—or rather, does not make it necessary for us to part with so much of the money that we have earned.

We have a question to answer in the query as to why the per capita fire loss in the United States is between $2.00 and $2.50, while that of Europe in 1913, had its maximum—eighty-nine cents—in Russia, and its minimum—twenty-five cents—in Italy and Austria.

Barring discussion of the countless contributing causes which partly account for this astonishing inequality in losses, such as protection, exposures, occupancies and the elements of time and place, all of which are but little understood by property owners, a large percentage of this difference must be charged to our persistance in erecting buildings of faulty or inferior construction, frequently in a short sighted effort to save a few dollars in the original cost. It can also be ascribed to our putting up buildings with no adequate provisions for preventing a fire from sweeping an entire block or series of blocks; and, incidentally, to our paying a rate of interest (by means of increased insurance rates), on the money which has been saved by this inferior construction, which would land a professional money lender behind the bars.

For example, Mr. Jones and Mr. Smith each own a cabinet factory, manufacturing the usual line of fixtures. For the sake of argument, let us assume that the two factories are each five stories in height, have an area of 5,000 sq. ft. of ground space, flooring throughout of plank on heavy wood girders and posts, that the buildings stand within ten feet of each other and that there are no other buildings in the immediate vicinity other than a large four story brick furniture warehouse which stands on the other side of a 14 ft. alley in the rear.

Mr. Jones and Mr. Smith both manufacture the same type of fixtures, employ the same number of men and all the processes of manufacture are identical. Mr. Jones and Mr. Smith each carry $80,000 insurance, $40,000 being carried on the building and $40,000 on stock and machinery. But Mr. Jones complains bitterly that he has to pay an annual premium of $2,008 while his friend Mr. Smith only pays $896 for the same amount of coverage.



by Using Brick

A Full Explanation of the New "Dean Schedule" of Charges and Allowances for Safeguards Against the Spreading of Disastrous Fires and Consequent Fire Losses



E. Winfield Day.

ASIDE from the actual saving in fire-insurance premiums comes the added safety from fire-loss and the interruption to business that follows a conflagration. Every builder who, thinking he is saving money by neglecting the erection of protective brickwork, builds in such a way as to make his own risk greater, pays for his folly. He also adds to the exposure of adjoining property owners. To call his attention to his shortsightedness is a duty of every citizen who may suffer through the increased fire hazard to which he is innocently subjected.

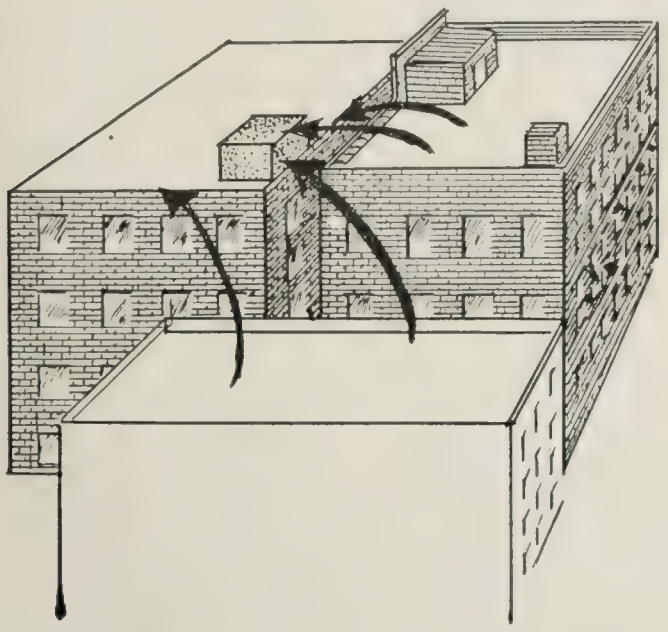
and E. Winfield Day

Here is a difference of $1,112 a year and figuring the life of both buildings at forty years, Mr. Jones and his firm are going to spend $44,480 more on their insurance than Mr. Smith and his firm—Why?

As most all buildings in the larger cities and towns of Illinois and many other states have recently been re-rated under the Dean Analytic System, and as nearly all will be as soon as possible, a few remarks about this new rating system may help you and prove interesting.

The Dean Analytic System is the latest and best of many analytic systems, or "schedules" for making rates. What is a rate? It is a numerical expression of the relative amount of fire hazard in the risk to which it applies. All the charges that enter into the make-up of a rate are numerical expressions of the relative amounts of fire hazard in those features of the risk to which they specifically apply. Therefore, a rate is a bundle of relations.

Fire underwriting is a business of issuing contracts called "policies" by the law of averages. The hazard, as a whole, is a compound, not of dissociated, but of related parts, and each part is as amenable to the law of averages as the total composed of all these parts.



ARROWS INDICATE HOW FIRE CAN ENTER JONES BUILDING.

All rates are purely comparative. Our knowledge of fire hazards is not a knowledge of hazards themselves, but of their relations to each other, and the main obect of schedule rating is *to make rates that will measure the fire hazard.*

All relations of fire hazards are relations of *quantity* and not quality.

Analyses of fire hazards show that the relations of fire hazards are both co-epistent and sequential, differences in hazard among risks and among different states—and differences as shown by our changing experiences from year to year.

This analytical system is founded on the belief that the "Analysis of a fire hazard involves a measurement of those relations both co-existent and sequential, which comprise our knowledge of fire hazard, by a standard which must necessarily be empirical and which must be applied without change to all degrees of hazard now existing or possible to exist" and under no circumstances can a rater afford to discriminate by favoring insurers or agents who may be a little stronger than others in their complaints or arguments.

Our rates must cover the hazards of construction, occupancy, protection and exposure, the different experiences in different parts of the country and the changing experience from year to year.

These are subect to analysis and can be covered by specific charges made to conform to the best underwriting judgment that can be secured. These, and other factors, are lumped in one sum, which is called the basic rate, therefore, our rates are bundles of constant relations, and each charge bears an unvarying relation to the basic rate, or, conversely, the basic rate a constant relation to the other charges.

If you will note the charges in the make-up of the rate on Mr. Smith's building, then re-read these brief remarks about the Dean Analytic System, you will better understand what the writer means.

Assuming some particular location the abstract of the charges and credits under the "Dean Schedule" would read as shown in the following page, and it must be remembered that these charges and credits mean more than the money

mentioned—they denote increased or decreased liability to fire loss in these two buildings.

	Mr. Smith's Building	Mr. Jones' Building
Basis Rate	$0.39	$0.39
Area, 5,000 sq. ft.	.0858	.0858
Walls	.00	.031
Parapets	.00	.07
Floor Openings*	.00	.975
Elevator Head	.00	.39
Occupancy charge	.7488	.7488
Boiler Room	.00	.39
Shaving Vault	.00	.39
Totals	$1.2246	$2.2421
*Credit for protected Floor Openings	.078	.00
	$1.1466	$2.2421
Credit for Mill Construction (20%)	.23	Credit for semi-mill construction, (10%) .22
	$0.92	$2.02
Exposures	.00	.29
Final Rates on Building	$0.92	$2.31
Final Rates on Contents	$1.32	$2.71

Here is a material difference in rates on two buildings which appear identical in construction and which have identically the same class of occupancy. Small wonder that Mr. Jones "wants to be shown." Primarily, however, Mr. Jones has overlooked the fact that the old, haphazard methods of determining fire-insurance rates are a thing of the past, and that analysis has developed with the experience of the companies on various classes of risks.

Today the inherent hazards of individual classes of occupancies have come to be better understood, as underwriters have gone further into the fundamental principles underlying "causes" and the ever increasing fire data upon which to base their conclusions has led to the development of schedules which make charges and give credits for every tangible thing about a risk which will have the slightest effect on the hazard of fire.

So to begin with, Mr. Jones, you have the unenviable knowledge, based on the best possible authority, that your chances of burning out are more than 100% more than Mr. Smith's.

Below is a diagram representing the exposing furniture warehouse, Mr. Smith's factory and yours.

To begin with, Mr. Smith made his walls the standard thickness, his two bearing walls being 20 inches in thickness on the first two floors and 16 inches on the floors above, the average thickness being 18 inches. But the average thickness of your bearing walls, Mr. Jones, is only 14 inches, so you take a charge of 1% for each inch deficiency from standard thickness for each bearing wall which totals 8%, and 8% of the basis rate of 39 cents is .031 cents.

Mr. Smith put standard wire glass windows in metal frames on all openings facing your building and the furniture warehouse. You say you did the same, and this is true, but after going to this expense you sought to save approximately $400 by leaving off your parapets and putting up a frame head over your elevator shaft instead of a brick one. Under normal conditions your wire glass windows will prevent a fire from entering your building, provided that all window frames are of approved metal construction.

But, Mr. Jones, there is absolutely nothing to keep a fire from communicating to your roof or elevator head and thus working into the building; a parapet 12 inches in thickness and 36 inches in height would prevent a fire jumping to the roof, and even if you insisted on having a frame elevator head, a brick fender wall would protect it. As it is this saving of $400 is ruinously expensive—here is what it costs you:

Lack of parapets	.07
Frame elevator head	.039
Exposures	.29
Total	.399 = 40 cents.

Mr. Smith saw to it that his parapets and brick elevator head were constructed according to standard, while you preferred to save $400 and it costs you $320 per year in premium, which, based on a 40 year life for your building, reaches a total of $12,800.

Again, Mr. Smith inclosed his stairs and elevator in a 12 inch brick shaft with standard fire doors in openings to his floors. This probably added $1,200 to the cost of his building, but he saves $136 a year in his premium. You, on the contrary, did not inclose your stairs and elevator, thereby saving that $1,200.

At first glance, the saving Mr. Smith makes seems small as compared with his outlay, but he gets it all back within ten years—while during the life of your building you pay out enough money in added premiums to cover the cost of four such standard shafts.

That however is not the only consideration. It is a well known fact that a heavily constructed building, with all floors cut off by means of brick shafts, with fire doors on openings to same, offers very little opportunity for a fire getting further than the floor upon which it originated, provided of course that the building is under fire-department protection. With your building, however, a fire will jump from floor to floor with incredible rapidity and the chances are that by the time the fire department gets to work they will confine most of their efforts to protecting the adjoining property. Fire-insurance at the best is only a balm, it can't replace all that you have lost and while you are rebuilding your plant how many of your customers will Smith get on his books? The possibilities of his having a serious fire are infinitely less than yours. These considerations should far outweight several times $1,200.

Mr. Smith put about $600 more into the construction of his boiler and engine room; this he cut off by means of a 12 inch brick wall with a standard fire door on the only opening into the rest of the floor space. Further, he made his ceiling of brick arches, and he saves $312 more in his premium. You have located your engines and boilers in the open and save that $600—at a cost of $312 a year in added premiums, and not only that, but you have added another possibility of a destructive fire—boiler rooms are notorious fire breeders.

Mr. Smith built a shaving vault of brick in his boiler

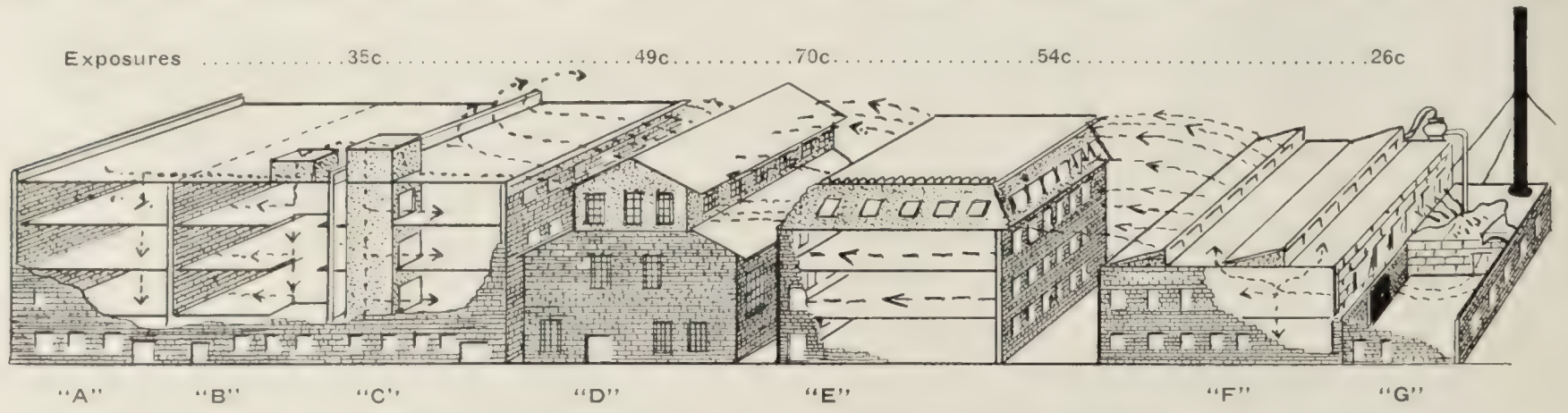


Diagram "B"—Scale 1 in. = 50 ft. Metal stack takes a charge.

room, with a sliding iron door, automatic in its operation, so that should a fire start in the immediate vicinity of this vault, or in the vault itself, the iron door would automatically drop, preventing the fire (if outside of the vault) from getting inside or if inside of the vault, cutting off the supply of air and thus smothering the fire. A steam pipe with an outside control affords still further protection. This feature takes off another $312 from his premium.

As the handling of any appreciable amounts of shavings and sawdust is one of the most prolific causes of fire in risks of this class (unless they are handled by efficient blower systems and feed to properly constructed brick shaving vaults), the cost of a brick vault and the saving involved pale into insignificance. Your obligations to your community and to yourself should far outweigh the consideration of a few extra dollars.

Summarizing—Mr. Smith has put up a building which is a model of its kind and while his class of work entails considerable fire hazard and the contents of his building are of high combustibility, he has done everything possible toward eliminating the origin of a fire as well as preventing its spread if it should occur.

But you, Mr. Jones, either for the sake of saving some $3,000 on your building or because you didn't know, and made no effort to know, have put up a building which will be an easy prey to a fire, both from the inside and outside.

Not only that, but you have overlooked one of the best investments that ever came your way; there was a chance to invest three or four thousand dollars more in your building and by means of a greatly reduced annual premium, get a dividend of approximately 33% each year, not to mention the sense of added security and the community interest well served.

In view of all the agencies for the dissemination of knowledge regarding the proper construction of buildings from a viewpoint of decreased fire hazards, it seems inconceivable that so many business men will slap up a building which at the best, barely conforms to the more or less loose building codes of their towns and cities and where practically every known structural means of preventing the spread of fire is ignored. In Europe strict building laws are laid down—and enforced—and it is a rare occasion when a fire gets beyond the building in which it originates. With us it is a common occurence and fires which involve several buildings are by no means unusual.

Take for example the row of buildings shown in diagram "B" in which the entire group is subject to one fire. Groups of buildings showing equal and even greater disregard to the hazards of communicating fires are common in all of our towns and cities. In these a most remarkable feature is the apparent consideration given to the subject of confining fire. Take the buildings A. B. and C. in Diagram "B"—note that the architect has provided standard wire glass windows on all openings facing the building D and has apparently figured that the two interior blank walls practically make separate buildings, particularly as he has carried the wall between B and C to a height of 36 inches above the roof.

He fails, however, to consider that the interior wall, which rises to the roof only, is no adequate cut off, neither is his parapet wall, so long as the frame elevator heads are present; a fire starting in A works up to the roof, runs across the roof boards on the under side and enters B. From B it jumps into C through the frame elevator head and the manner in which the fire will be transmitted through the block is readily apparent.

On the other hand, supposing that the fire starts at the other end of the block in G and burns through the roof; the presence of the tile wall overlooking this roof, despite the fact that the windows in same are of wire glass, is a very questionable cut-off—a tile wall will sometimes hold off a fire for a considerable time but after the wall is heated, a fire stream directed at it will frequently result in its crumbling. The best proof of the unstability of the tile wall as regards a fire cut off, is the fact that the newest rating schedules provide a charge for the presence of tile walls, the charge being doubled if the tile wall is a bearing wall.

The lack of a parapet overlooking the alley on building F will radiate a direct exposure into building C. Once into C the fire will jump rapidly into the large frame texas on D. From D the fire will seek ingress into C—it cannot do so through the windows as they are all protected by wire glass windows. The possibilities are great enough, however, of its entering by means of the roof, there being no parapet to prevent another direct radiation. It is not claimed that a fire will always enter a building through roofboards where there is no parapet overlooking the exposing building, but it is of frequent enough occurrence to warrant a charge for exposure, where otherwise there would be no charge.

In this group of buildings there is a total exposure charge of $2.34, so that, if there is $200,000 of insurance in the block it means a matter of $466 per year. Not only this, but the construction shown is such that the rates on the individual buildings are materially increased, so that, in all probability, the premium collected annually by the companies insuring the various buildings and stocks in this block is from $1,000 to $2,000 more than it would be if the fire hazard had been given due consideration when the buildings were erected.

Barring, however, the fact of increased individual rates, the presence of the heavy exposure charges is the best indication of the fact that a fire once well started in any of the buildings is likely to take the entire block.

In view of this, what was the object of spending a thousand dollars or so more for wire glass windows? Wire glass is an effective cut off, but a fire will, unfortunately not

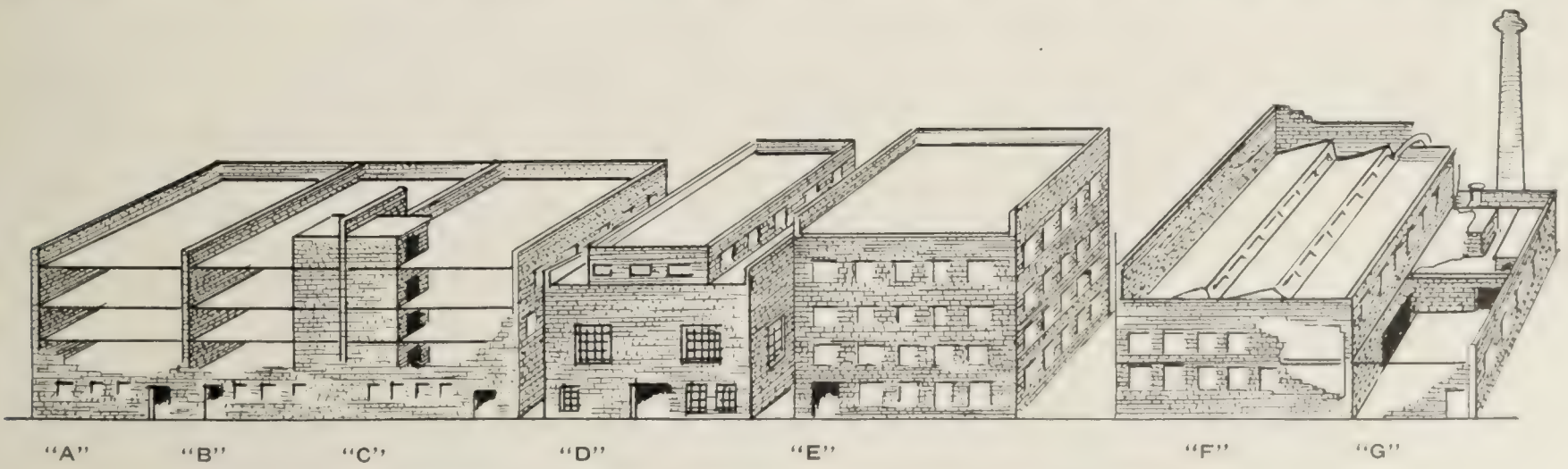


Diagram "C"—Scale 1 in. = 50 ft. Brick stack takes no charge.

devote its entire attack to the most effective cut off. It will also seek entrance through the weakest points.

Theoretically, then, if the owners of these buildings were bent on saving money at the expense of increased fire hazard and the jeopardizing of lives, they could have very well saved themselves the expense of wire glass windows in buildings C and F.

Now take the construction in diagram "C." Here the buildings have been put up with a thorough knowledge of the features required for the practical elimination of the hazards of exposures as well as with a regard for moderately low insurance rates. Neglecting the presence of the interior features of construction such as inclosed stairs and elevators, brick shaving vaults, etc., note the external construction; the standard parapets and elevator heads and wire glass windows. Building A and B, which under diagram B would be rated as one building is now two distinct buildings. A fire originating in any building in the block other than building E would be confined to that building, both because the other buildings are built with a regard to eliminating the exposure feature and because the inside construction of the buildings is of a nature to make the spread of fire difficult and thereby reduce the intensity of the heat radiated against the exposed buildings. Building C is the only building in the group which is subject to exposure as all the windows are thin glass. The exposure charges would be considerably lower, however, and the probabilities are that the damage resulting from an exposing fire in D or F would be only nominal.

It is infrequently, of course, that we find a building in which is violated every known principle of good construction from a fire insurance point of view but to find several buildings subject to one fire through an utter disregard of structural standards is common.

In a large fireproof terminal warehouse in Chicago, space is being leased to various tenants. When the floor space in any particular section is pretty well leased out, the warehouse people have agreed to put up walls between the various tenants. Tile walls were contemplated, but it was found that tile walls were not considered as an adequate cut off; a tenant therefore who had his stock inclosed in a tile cut off section paid practically the same rate as if the stock were in the open. Brick walls, however, had the effect of reducing the rates from 25% to 40%.

In closing, it is well to say that, in nearly every case where a business structure is being remodeled, or added to, a material saving in insurance premiums can be made by the intelligent application of certain rules that, while well known to men who have made a study of them, are almost as Greek to the average property owner.

The same thing may be said of building—that is, building new. The architect is accused of doing this, or that or some other thing "unnecessarily" and "running up the cost" until he must grow tired of listening to these objections, made, as he knows, in ignorance. The better way would be to consult the insurance expert. He knows what will reduce premiums, and can tell you how much you will save by installing preventive features. He knows, for instance, that—

You save money by building standard brick parapets and brick elevator heads, by enclosing stairs and elevators in brick, by brick chimneys, by brick vaults for shavings and other similar by-products and refuse, and by brick boiler room enclosures.

You lose money by omitting parapets, by building frame or metal clad elevator heads, by using unprotected structural iron, by having open stairs and open elevator shafts, by using metal stacks, by "getting along without" vaults for shavings and the like, and by not having your boiler room enclosed.

The moral is, also—use brick! Added to all of the other and manifold virtues of brick construction is that it starts in, almost the day that it is completed, to earn *money for you,* not only by reducing your insurance premiums, but lessening your exposure to fire.

Brick used by your neighbor also lessens your fire risk—and, from this cause, if no other, your duty as a citizen is clear. If your neighbor is penny wise and pound foolish, so that he builds as "cheaply" as possible, according to his way of figuring—you do your part to prevent his increasing your risk. He is ignoring your rights! Go after him! Show him his folly—he will probably listen to you, since he has to live so near you. Show him that he will save money by spending it for brickwork. Incidentally, you will be doing your part to cut down some of that two hundred and fifty million annual fire loss.

Northwestern Clay Association Holding Annual Convention

An entirely new line of papers and discussions will make the sessions of the Northwestern Clay Association, held in Minneapolis, Minn., January 19 and 20, memorable in the annals of claycrafting in that part of the country. One of the opening papers will be read by John J. Thomas, of the Lloyd-Thomas Company, of Chicago, who is known to "Brick and Clay Record" readers through his authorship of the series of articles "The Fire Insurance Contract" now running in this journal. William C. Koch, of the Twin City Brick Company will present "Cost Finding and Accounting" and George M. Gillette will portray the "Dangers of Changes in Lien Laws." A stereopticon lecture on the application of electricity to clay plants will be a feature of the second day, this being given by C. W. Drake, of Pittsburgh.

Another stereopticon lecture, "Modern Excavating," will be given by G. A. Morrisson, of South Milwaukee, and C. M. Avery, of Aurora, Ill., will read what promises to be a paper of absorbing interest, on clay storage. Papers on "The Economic Application of Pyrometers," on "Power" and on "Advertising" will be presented by men who have favorable reputations for practical experience and eloquence, and it does not appear as though a dull moment could creep in on all fours.

E. H. Cobb, of the Hydraulic-Press Brick Company, of Minneapolis, will be toastmaster at the banquet and the musical numbers will be under the auspices of the Minneapolis Ladies' Quartette.

Panama-Pacific at Detroit.

Among other speakers who will be on the program at the National Brick Manufacturers' Association Convention which will be held in Detroit during the week of Feb. 15-20 will be Herman L. Matz, President of the Panama-Pacific Clay Products Association. Mr. Matz expects to be able, at that time, to show photographs and possibly lantern slides of the house as it stands completed at the Panama-Pacific Exposition and of the booth which, it is expected, will be maintained in the interests of brick, in the Mines and Metallurgy Building.

His object in appearing before the convention will be to secure funds for a still greater publicity campaign connected with the Panama-Pacific Clay Products Association.

The Science of Cost Finding

The Second of a Series of Papers On a New Phase in Clay Plant Cost Systems and Their Value

By Edward E. Sheasgreen

TO ATTEMPT to make brick without a full knowledge of cost is as wrong and as hard as the task placed upon the Children of Israel—that of making brick without straw.

Percentage methods of figuring cost (on wages, sales, investments, etc.) have been found to be wrong and will, in a few years, pass into oblivion.

There is as much difference between the results obtained in figuring costs on a percentage of wages paid, of sales made, or of investment of capital, and of figuring cost on the straight productive hour cost, as there is between raising hogs according to the "jes, let 'em grow up" plan, or raising them according to the scientific methods put out by the Government. The "jes, let 'em grow up" plan hog weighed sixty-five pounds at the end of the year, and brought $10, while the scientifically cared-for hog from the same litter weighed, at the end of the year, four hundred and eighty-five pounds and brought $50.

The business run on percentages is of light weight so far as profits are concerned, while the business run according to the law of distribution, or the science of cost-finding and analysis on the productive hour cost basis, is by far the heavy weight.

Because a man is a first-class mechanic—a brickmaker, machinist, artisan or workman, or whatever you may wish to call one who works at a trade, or because he may have saved a five hundred or a thousand dollar "stake"—does not make of him a first-class business man. To be a first-class mechanic and able to properly and efficiently "make" a commodity—that is one thing. To be a first-class business man and one who knows how to *first* get back every dollar of cost and to know what these cost dollars really are—and they are many times greater than the wages paid—that is another thing—and a first-class business man need not really know how the commodity is put together.

As a mechanic—as a worker—about the only cost item in the business of the company he is working for or in which he is interested, is the wage he receives for the commodity—labor—which he sells. Consequently, when he becomes a "boss" and opens his first set of single entry books—if he even does that much—he is bound to figure his manufacturing cost from the standpoint of the wages he pays those now working for him. He knows no other way.

As the business grows, and as he begins to feel that he has not just the grasp on his business that he should have, he ventures into the mysteries of double entry bookkeeping, probably hires a bookkeeper—and because the sales have increased greatly or, because he has invested heavily in new equipment—feels that he must figure cost on a percentage of sales or of investment.

He may even figure his cost from all three standpoints—and then he *is* in a bewildering maze of figures; which way *should* he go—*which* of his three sets of cost figures shall he use in making selling prices? Because he has brought his business thus far—and successfully—he imagines that he is a good business manager—a good navigator. In a way he is, but not as good or as *safe* as he should be.

Now, the chances are that he has added to his productive labor and to material used, a certain percentage that will bring back such expenses as he thinks and counts as his "overhead" expense or burden. This percentage hits all of his different commodities from different angles—some carrying far more expense than they should—others far less.

A short time ago, the writer was called to a big house in a far different line than making things from clay. He was told that the house was "up against it" bad. Questioning brought out the fact that the manager had, for a long time, been using a percentage method of cost finding. He had been adding seventy per cent to the productive payroll. This seemed a large percentage to him—when he knew that others in the same line were adding less than fifty per cent—and in other lines as low as ten per cent.

The annual statement of that company was analyzed and the figures disclosed the fact that there had been entered as overhead cost items—not seventy per cent more than their productive payroll, but four hundred per cent!

And another blow was received when it was pointed out that they had overlooked another ninety-eight per cent which had never been counted or even thought of as cost items.

A difference of four hundred ninety-eight per cent is some difference—a difference that would put any business on the rocks in time, some sooner than others. The only thing that had saved that particular company from "going broke" long before, was the fact that the material cost was several times greater than the labor cost and that it had stood the same percentage of the payroll.

Now, clayworking friends, have you been doing business on percentage methods? If so, your industry is in the same boat as the business I have just outlined. If so, there is but one right thing to do—cut out percentage methods of cost figuring and get the true hour cost—which cost will carry some part of every item of expense and accordingly the least understood of all laws—the Law of Distribution.

The four hundred and ninety-eight per cent of overhead spoken of above is but a little stronger than the average condition of commercial enterprises—though one plant is in mind where the overhead is greater than *twenty* times the productive wage—and since ten per cent had been added to labor and to material, it can be seen what a tremendous load the raw material was made to stand.

The average plant—or business—dies a slow death—ten, fifteen, twenty years maybe—through using percentage methods of cost finding. Such methods cannot properly get back all the dollars that go into the product—hence the tragedy of "going broke" must surely come.

Many who read these lines may gasp to think that their overhead may be so many times greater than their payroll. They may rest assured that in the average manufacturing plant—even in clayworking plants—there are many things that exist and that have always existed which men are just

beginning to know—and as to "real' profits—it seems that "there ain't no sich animal" as real profits coming to a business where cost has been figured on a percentage basis.

The cost of nearly all business at all times has been found—not by distributing expense to the thing that has benefited by that expense—but by false percentage methods. This is as wrong as it would be for the grocer to charge on a percentage basis the bill of Mr. A. to Mr. B. because A. was older, or richer, or taller, or shorter or poorer than Mr. B. If such methods of charging A. or B.'s account for goods purchased was followed, there would be a fight right away and the grocer would be condemned as an eminently unfair man to deal with. And so by this false percentage system products are being wrongfully burdened—some over-burdened, others under-burdened. In consequence of the wrong burdening, business is suffering every moment, every day, every year by thousands of complete failures, tens of thousands of near failures, reorganizations, or a selling out at a tremendous loss to both capital and energy.

And so we see that because men receive a wage while they are workers they use wages as a standard of figuring cost when they become employers, because they know no other method.

Then, too, the check or checks drawn for wages make up the one big single item of cost in a week, a month, or a year.

Few managers, if their company owns the plant property, ever draw a check each month for rent—and thousands of managers never figure rent on their property at all. Few managers ever draw checks for bad accounts or allowances and discounts to customers, or for spoilage or "dead head" work.

Few managers ever draw checks for the interest items at 6 per cent on their original capital invested—bank balances, open accounts and work in process being included.

In one plant the interest alone on open accounts that had to be carried for never less than nine months before a penny came back, was over three and one-half times the productive pay roll.

Few managers ever draw checks for an amount monthly that would in a period of, say, ten years, actually replace in tip-top working order, the *original* capital invested in their plant, office, delivery and other equipments and tools.

Many managers—or rather owners of plants and even of a merchandising business—*do not take any salary*. They wait until the end of the year and take "what is left." This sounds good. But when "there ain't no leavin's"—ah, that's the pinch!

And, so because wages are the one big single item of cost, men have taken that one big single item as a base on which to figure their total cost. And how they have managed to get from ten to seventy per cent *only* to add to wages to cover all their other cost items is a mystery!

One manager, very much crestfallen over the fact that his sixty per cent should have been better than four hundred per cent, bitterly assailed a well-meaning accountant who came out to his plant, and when through some unknown (to the manager) method, found what they thought the whole cost was in the sixty per cent.

And there are as many "Doubting Thomases" in your line as has been found in many others. Some of them will say: "I don't believe a word of it"; "it cannot be so with *our* plant"; "our business is *so* different from any other that no other method but the one we have always used would do for us"; "if we changed we would surely go broke"; our plant is too *large* for handling any differently than we do"; "if we were to change our competitor would get all our business"; "the whole idea is one of 'bunk'."

But the problem of solving any problem is one of proper treatment—and the new cost methods are proving to be the proper treatment that in time will solve even that most complex and exasperating of all business problems—the problem between Labor and Capital.

Beginning with the next article, I will begin a discussion of the fundamentals of "Cost Finding and Analysis."

Hollow Building Tile Manufacturers Elect a Secretary



Charles T. Harris

FOR an infant organization, the new Hollow Building Tile Manufacturers' Association is showing signs of extreme energy. In the first place, it selected a man of wide experience and acquaintance as its executive secretary, following in this instance the good example which had been set by the more successful clay organizations that have come into being during the last few years. The man upon whom the choice fell was none other than Charles T. Harris, a man who has spent more than twenty-five years in the clayworking and clay products selling business.

A familiar figure at all clay conventions, a ready and convincing speaker, a good executive and an earnest believer in burned clay as a building material, he brings to the association a wealth of qualities.

It is unnecessary to recite the lines of endeavor in which Charles T. Harris has shown, but suffice it to say that they have all been on burned clay lines and that, in connecting himself with the newest and, seemingly most promising of clay organizations, he has not only done himself a good turn but has so placed himself as to be in a position to give valuable services to the men who are employing him.

A host of brickmen will be glad to know that "Charlie" Harris is still in the clay game, despite the fact that he, being with the hollow tile men, will, to a great extent, be fighting brick instead of "boosting" it. A thought comes here, however, that hollow tile will never do very much fighting until it is attacked by brick, and, as was pointed out in an editorial published in this magazine some weeks since, the fight made against hollow tile by the brick interests of Detroit had much to do with the formation of this new association, in which Charles T. Harris holds so important a position.

New York Brick Men Fraternize

Building Material Dealers Break Bread With Manufacturers to Promote Better Feelings in the Metropolitan Market

TO create a more friendly feeling and to discourage much of the injurious competition and harmful dissension among the building material men of New York City, the New York Building Material Exchange held its first annual banquet at the McAlpen Hotel on January 7.

In its report of the banquet, the New York "Herald" gives the following words spoken by Joseph F. Miller, president of the Exchange, in welcoming the five hundred or more delegates to the convention, which included representatives from practically every section of the metropolitan district:

"It gives me a great deal of pleasure to welcome the men who are responsible for the greater New York, for the splendid evidence of their spirit of co-operation and friendliness displayed by their presence at this, the first annual banquet of the New York Building Material Exchange. It is the wish of the committee that every member here forget his business for the rest of the afternoon and evening and to get together in a spirit of cordiality and good fellowship in the hope that this spirit may endure all during 1915, a year in which we have great expectations for improved business conditions."

The affair was managed by John B. Rose, president of the Greater New York Brick Company, chairman; Joseph F. Miller, William C. Morton, Orin F. Perry, George A. Molitor, secretary of the Building Material Exchange, and Joseph C. Seguine, of the J. B. King Company.

Prior to the banquet there was a reception in the loggia, at which time opportunity was given for an exchange of ideas as to the best possible way of getting together, stifling unfair and injurious competition and to encourage builders who have operations in projection to go ahead with their plans while the price of building material is low.

John B. Rose, in speaking of the purpose of the banquet, said: "Building material interests for some seven years have been in a state of gloom. It is not the time to review the causes of that condition. On the other hand, the Building Material Exchange considered it an opportune moment for gathering all the important building material interests of Greater New York and New Jersey together in the hope that a better feeling of cordiality might be engendered so that we could eliminate much of the subterranean dissension that has in the past militated against the welfare of the building material manufacturing and distributing business. We have felt that the best way to do this is to bring all the different interests together on a common plane, and with this idea in mind the Building Material Exchange decided to break all its precedents and to start the year 1915, so full of potentialities for prosperity, with a 'get-together fest.'

"Building material interests are better fitted than perhaps any other industry to note the trend of the times. In the recent past the trend has not been encouraging. At the present time the tendencies are more encouraging.

"We sought for some way to express this feeling of optimism and this banquet and entertainment is the result. It is our hope that the ultimate results of this gathering will be a stimulation of co-operation among the various branches of the building material field. There is no good reason that I know of why the building material market should be so diversified in interest.

"We want building investors and operators in the metropolitan district to feel encouraged to go ahead with building plans. They can buy building material cheaper today than it has been possible to buy material before. This condition cannot long endure. The time is ripe for building operations to go ahead. We feel that an era of prosperity is just beyond and with everybody pulling in the same direction, with the general welfare of building material and construction interests in the metropolitan district at heart prosperity can and will be assured."

The Building Material Exchange of New York was organized in 1882. Its purpose is to provide a meeting place for building material buyers and sellers and for that purpose it has its quarters in the Woolworth Building.

Reduced Production of Portland Cement.

The Portland cement manufactured in the United States in 1914 approximated 88,514,000 barrels, compared with 92,097,131 barrels in 1913, a decrease of about 3,583,000 barrels, or nearly 4 per cent. These preliminary figures are given out by the United States Geological Survey and are based on returns received by E. F. Burchard from all the operating mills in the United States except one, for which an estimate has been made. The estimated shipments of Portland cement during 1914 were 86,715,000 barrels, compared with 88,689,377 barrels in 1913, a decrease of about 1,975,000 barrels, or 2.2 per cent. On account of the surplus production over shipments stocks of cement at the mills apparently increased more than 14 per cent, or from 11,220,328 barrels in 1913 to 12,818,000 barrels at the close of 1914. The estimates furnished by some producers undoubtedly included more or less unground clinker, but it is believed that the figures for production and shipments, if not for stocks, are close to those that will be shown later by exact reports from the producers.

The Lehigh district of eastern Pennsylvania and western New Jersey produces more cement than any other section of the United States—about 28 per cent of the total production. This district showed a decrease of more than 9 per cent in both production and shipments of Portland cement. The Illinois and northwestern Indiana district, which is next in importance, with an annual output of more than 11,000,000 barrels, showed a slight decrease, and the Pacific coast district (California and Washington), which is third in importance and produces about 8,000,000 barrels, showed a decrease of about 12 per cent. Important increases in production and shipments were shown by New York State, the Michigan-northeastern Indiana district, Iowa-Missouri district, the Maryland-Virginia-West Virginia district and the Rocky Mountain district. The average value per barrel was probably slightly lower than in 1913.

Brickmakers Protest Unfair Competition

Considerable agitation has been caused among the brick companies of Washington, D. C., concerning the "rider" to the District of Columbia appropriation bill, allowing the District workhouse at Occoquan to sell brick made there to the Federal government.

At present the fact that the product of the workhouse can be sold by the District government, it has been pointed out by local brick factories, is a hardship, but now that the Federal government may also buy their products is arousing a great deal of opposition.

L. Perry West, of the West Brothers Brick Company, is taking an active interest in the matter, and as a result, the Board of Trade of this city is investigating the matter and will help in the protest to Congress.

Many reasons have been pointed out why this condition is unfair. In the first place, the brick factories have to pay taxes to the District of Columbia, while the workhouse pays none. Moreover the Federal government will not buy goods that are made by convict labor, when these goods are offered by private concerns. It has been found by local brick factories that they cannot compete with Occoquan in selling brick to the District government, owing to the cheapness of the labor.

It is said that the output at the workhouse is now only 25,000 brick per day, but the claim is, that if they are allowed to compete for Federal contracts, they will increase their capacity, according to local brick men.

Dollars Rather Than Bushels Wanted.

The farmer is becoming more and more recognized as a good customer for clay products. Clayworking plants which have heretofore been devoting all of their time to supplying needs of the home builder, apartment house and factory builder in their local town are now spending a portion of their time in looking after the needs of the farmer customer for burned clay on the farm. Many plants have increased their equipment to make silo blocks, building blocks and drain tile, because there is a growing demand for these commodities on the farm.

It follows that a not inconsiderable number of the clay-working fraternity is vitally interested in the welfare of the farmer—his material prosperity. Working along these lines, the following editorial appearing in "Wallaces' Farmer," of December 25, a journal that aims to circulate exclusively in Iowa, will, no doubt, be of interest to clay product manufacturers marketing their wares in that state:

"We shall give more study to methods by which the farmer will get more for the stuff he produces. It does not profit us to increase our production if by so doing we reduce the money we get. We want more dollars, rather than more bushels, tons, or pounds. 'Wallaces' Farmer' will give more attention to this.

"We shall give more space to farm organizations, clubs and co-operative associations which will enable the farmer to market his stuff to better advantage. The need for such organizations is becoming more and more imperative."

Many farmers have had the feeling that the widespread movement to increase production, which has been going on for several years, should be accompanied by an effort to market the increased production to better advantage. "Wallaces' Farmer" has a most complete organization of specialists, and if it goes into the questions mentioned in the editorial, it can render a tremendous service to the farmers and business interests of Iowa generally.



Wire-Cut-Lug Brick at the Good Roads Congress

Dunn wire-cut-lug paving brick was a dominating feature at the American Good Roads Congress, held at the International Amphitheater, in the Union Stock Yards, Chicago, in December. An elliptical paved road was laid, sections being put down by various paving interests, but none attracted the attention that was given to the one shown in the accompanying illustration.

The pavement was laid with dark red, shale paving brick, and in them the words "Wire Cut Lug Brick" were spelled out in light colored fire-clay paving brick. Altogether it was an impressive showing of the good advertising sense of the Conneaut company.

The section illustrated was twenty feet wide by forty-five feet long, and the excellent features of the wire-cut-lug were demonstrated most satisfactorily to a number of road engineers, highway commissioners and others who control the materials that are surfacing the good roads of America.

The Fire Insurance Contract

Wherein is Shown the Fallacy of Waiting for a Fire Before Finding Out What Your Property Consists of and What It Is Worth

By John J. Thomas

Of the Lloyd-Thomas Company, Chicago.

IN THE first paper of this series, I called attention to the words "This company shall not be liable beyond the actual cash value of the property at the time any loss or damage occurs," and endeavored to show you what that "actual cash value" was. Briefly, it is the value of the building and of contents *new* (or what it would cost to replace, new), less a sufficient amount to offset the depreciation *from new* that the property had sustained up to the very minute the fire started.

I promised you that I would give, in this, the second paper, an explanation of a way by which this "actual cash value" could be determined, and guaranteed to you. To this I will devote the greater part of this installment.

Let us suppose, for a moment, that your plant has just passed through a fire. You have notified your insurance agent, and have received a visit from some representative of the fire insurance company. He asks you, first, the figure at which you set your loss. A great part of your building is standing, some of the machinery is warped and twisted, some, perhaps, can be repaired and made serviceable. You make a "guess" figure—your policies have called for a certain amount—you say to yourself, "If I could get two-thirds of the face of the policies I could rebuild, put up a much more modern plant, and, by replacing some of that machinery with a later model, increase the efficiency by twenty per cent." So, as your "guess" figure, you tell the insurance man that you think so-and-so much is right.

While you may not realize it, you are hoping that you will make a profit on that fire, and this is the very last thing that any insurance company desires. As I have already explained, when fires are profitable, *there will be more of them.*

So the insurance man asks you how your propose to prove this amount of loss—this two-thirds of the amount written into your policies *as the limit beyond which the insurance company will not go.* And you tell him, perhaps, that you know what the value of the building was, and you know what your machinery cost you, and you know that what is left of them is "out there," charred and lime-streaked and dripping.

You probably add, as though this was a new thought, never before expressed under like circumstances, that you "want to get it settled up as soon as possible," so that you can "get started up before you lose all of your trade."

And so you put your future, or rather the future of your business, in the hands of an insurance adjuster, with the admonition to "be quick about it." When he comes back, and offers you about one-third of what you expected to receive, you think you are a most abused man.

Now the insurance company made a provision for a fair and equitable settlement, and a settlement made in the least possible space of time after the fire—made this provision before it signed the fire-insurance contract that you have been calling a "policy."

In the finely printed lines that are a part of all standard fire-insurance contracts, in lines 67 to 73, are the conditions that you must make a complete inventory of the property and give the "actual cash value" of each item thereof *and the loss thereon.* In accepting that contract, even though you have called it a "policy," you agreed to do that very thing, in case of fire. *You knew, however, that you would not be able to do it, unless you kept an exact inventory of all property contained in the building, all through the years that preceded the fire.*

Now if your business is one that is run on anything that even approximates good business principles, it has an inventory, of some kind, of the "assets" of the firm or company. This begins at the amount of letter heads and envelopes on hand at the time the inventory is taken, and ends at the outer walls and the roof of the building that contains them.

For the purpose, perhaps, of arriving at the value of "furniture and fixtures" and other like items in your annual statement, you have, at some time, made a careful inventory, and have set what you call "fair replacement values" on the various articles. Then, as the years went by, you added the value of the new things you have bought—a new dry-pan, the addition to the shed—a new adding machine in the office.

Do you realize that, while this ancient inventory will aid in effecting a prompt and satisfactory settlement, it is a mere makeshift? If your fire had occurred a few days after the original inventory was made, that inventory would have been worth its weight in diamonds—yes, in radium. But today—years after it was first made, it is a mighty insecure prop upon which to build your hopes for a settlement that will cover, to any satisfactory extent, what you call and consider your "fire loss."

What, then, is the better way? First, it is to have an inventory made—not as a "little something extra" for the bookkeeper to do—but by a recognized expert appraiser. "Phew!" you say—you are not going to sell, or lease, or put a bond issue on your plant!

No? What are you doing? Are you not selling what you claim to be two-thirds of the plant? And are you doing it at a time when things are favorable to your making a good bargain? Remember, you told the adjuster to "be quick about it," or you would lose your trade.

You almost admitted that, if you were going to sell your plant, or lease it, or put a bond issue on it, you would call in an appraiser. What would be the reason? Well, in the first place, the "other fellow" would take the appraiser's word for items and values, when he might think you were "putting a little on"—ah! What of the attitude of the insurance company?

Much as you would like to believe the contrary, your bookkeeper is not capable of making an inventory and putting proper appraisal figures on your plant. One reason is that he is familiar only with the type of machinery that you use—the kind of building you occupy. He does not follow—unless you have recently added an extension—

the cost of building construction. Nine cases out of ten, he will inventory and appraise your factory building, if it has been kept in good repair, at the figure it cost you to build it, ten or fifteen years ago, making no allowance for depreciation.

That sort of appraisal is "guessing." Building construction may cost a great deal more today than it did when your factory was built. At the same time, modern methods of construction give greater lighting area and other advantages. Some buildings, ten years old, are worth much more than the day they were built—others, ten years old, are, although carefully repaired, worth about half of what they cost.

Your bookkeeper has little or no knowledge of these facts, yet they are necessary to the keeping of an inventory that shall *show the "actual cash value" at the time of the fire.*

And again—the making of an inventory of this kind would bring out many interesting and, perhaps, valuable points in the conduct of your plant management. Your statement to Bradstreet and Dun is based, somewhat, upon some sort of an inventory and appraisal. Would it not be well to base your own knowledge of the foundation of your business—the value of the money you have invested in it—on an expert appraisel, rather than a guess?

Having called in an appraiser, you will see the value of his work lies, not only in the confidence others will repose in his findings, but in the systematic way in which he goes about his work. You, for instance, bought a cutting-table some years ago, for say, $300. It is doing your work satisfactorily. There is no reason, in your mind, why that table is not worth $300—less an insignificant sum for wear. You know, if you keep up-to-date on the improvements that are being made in clayworking machinery, that the model you are using is antiquated. The very firm that sold you that cutting table has a new and improved model that will do twenty per cent more work with the same power and in the same time, and it sells the new model for $300. At best then, by a fair comparison of prices, your old cutting table is worth only $240, *less wear and tear.* Inquiry may elicit the fact that the same machinery house is willing to sell you a new cutting table of the same model as yours for $200. If so, your old table is worth $200, *less wear and tear.* You have never looked into the matter from that angle, but the expert appraiser would.

On the other hand, your books may show that you bought a second-hand brick machine at a bargain—at fifty per cent of its real value. You do not know where you could duplicate the bargain. If you had to buy a new brick machine, you would have to pay twice as much. If that be the case, your brick machine is worth twice its "book value" *less wear and tear.* This is a point that the expert appraiser would bring out in your inventory.

The services of an expert appraiser may be secured at a very low figure. Considering the work he will do for you, his services are very cheap, indeed. Following his first appraisal, he can be brought in, year after year, and, taking his original appraisal as a basis, and employing the knowledge he has of costs, he will be able to bring that appraisal up-to-date with very little expense. And, if you have a fire, his latest appraisel will be taken by the fire-insurance adjuster at close to its face value. With it, the insurance company and you will be able to arrive at a satisfactory basis for settlement without the employment of special appraisers, to be called in after the fire.

For there is a wise provision, made in every fire-insurance contract, that speaks of the manner in which a compromise shall be made, in case an agreement cannot be reached between the insurer (the company) and the insured (the owner). Line No. 2 in the finely printed matter that has been spoken of so many times reads, "Said ascertainment or estimate shall be made by the insured and this company or, if they differ, then by appraisers as hereinafter provided." This provision is described in detail in lines No. 85 to 91, as follows: "In the event of a disagreement as to the amount of loss the same shall, as above provided, be ascertained by two competent and disinterested appraisers, the insured and this company each selecting one, and the two chosen shall first select a competent and disinterested umpire; the appraisers together shall then estimate and appraise the loss, stating separately sound value (this is synonymous with 'actual cash value'—J. J. T.) and damage, and failing to agree, shall submit their differences to the umpire; and the award, in writing of any two shall determine the amount of such loss, *the parties thereto shall pay the appraiser respectively selected by them and shall bear equally the expenses of the appraisal and umpire.*"

So you see there is an excellent chance that you will be called upon to pay, not only one appraiser, but half of the fee exacted by another, acting as umpire.

No one who has had experience with reputable fire-insurance companies can sucessfully challenge their records in paying promptly every dollar of insured loss that the owner will prove. As a matter of fact, the fire-insurance companies want to pay fire-losses without the extra expense of arbitrators and appraisers. They enter into these arbitration proceedings with the greatest reluctance, and as a last resort.

Losses go to arbitration only when the owner is unable to prove the losses that he believes and claims he has sustained. When he can and does prove the "actual cash value" of the property that has suffered through fire, he receives a prompt settlement that enables him to resume business with a minimum of lost time and a settlement that, so far as the amount is concerned, will enable him to put his plant in good shape.

But insurance adjusters cannot, if they protect public policy, accept incomplete data as to quantities and values. Your fire-insurance contract has pointed out to you what you will be called upon to furnish, in order to prove your loss. If you accept that contract, and are unable to live up to its provisions, you cannot blame the adjusters, if they assume you have had some good reason for not furnishing the data you agreed to.

An appraisal made before the fire will be cheaper, in its initial expense to you, than one made after the fire. In addition to this, it will supply you with accurate figures that you may use, if you care to, in making up annual statements, in making credit reports—in knowing "where you stand." The owner who goes through arbitration is fortunate, indeed, if his share of the expense is less than $300 on a fire involving property worth $100,000. Yet this same expenditure ($300) would pay for the services of a disinterested and competent appraisal company to make a complete appraisal of the same property before any fire-damage came to it.

I promised to point out to you, in this paper, certain points wherein you were jeopardizing your fire-insurance contracts by not living up to certain provisions, but will have to hold this information for the next paper, which will be at your desk in two weeks.

BE SURE TO READ
The New "Questions and Answers" in the Machinery & Equipment Department, on Page 175.

Dayton—Pivot for Permanent Road Projects

Some Comments on the Completion of the First of a Series of Brick-Paved Highways to Radiate from the "Gem City"

By Victor C. Smith

Republished from "Dependable Highways."

LAST month saw the completion of the first brick road to be laid in Montgomery County, Ohio, a part of a projected outlay of $150,000 on this type of road, to radiate from Dayton, which is the county seat. These roads are the fruits of a system of state aid which has lately been inaugurated in the Buckeye State.

The prospect of a network of smooth, enduring highways adjacent to the city, is immensely popular with the people of Dayton and the surrounding territory. This would be true in almost any locality, but doubly true in the present case. Dayton is one of the few cities of less than 200,000 in which the habit of buying and selling produce in a farmer's market has been thoroughly established. Dayton is largely independent of rail shipments for ordinary food-stuffs, but it is therefore doubly dependent upon the condition of the roads for the cheapness, quantity and variety of farm and dairy products offered for sale on its streets.

In the prospect of brick market roads, the Daytonian sees uninterrupted market conditions the year around and the farmer sees comfort, cleanliness, saving of time and better profits in the place of small loads, fagged teams and dreary hours on the driver's seat.

The road in question is one of four radiating main market and inter-county highways which have seen the commencement of an extensive paving program this year. The first, the Covington road improvement, is little more than a mile in length. Two and a half miles of paving is under way on the Dayton-Cincinnati route, a trifle less on the Dayton-Troy road (a part of the through route to Toledo) and one mile on the Dayton-Greenville road. An additional mile and a half of the last named road will be graded this year in preparation for a brick surface next year.

This year's program entails the expenditure of about $180,000 owing to difficult grades which have been reduced and the generally sub-



Laying Brick and Rolling Sand Cushion on the Troy Pike, a Part of the Through Route to Toledo. This Road Will Facilitate the Movement of Farm Produce to the Table of the Daytonian.



Laying the Concrete Base on Covington Pike, One of the Four Radiating Main Market and Inter-County Highways.

stantial scale of our undertaking. Of this, the state is furnishing one half, a recognition of the extent of the through traffic which is destined to use these main market inter-county roads. The remaining fifty per cent of cost is divided so that twenty-five per cent falls on the county, fifteen per cent on the various townships and ten per cent upon the owners of adjacent land.

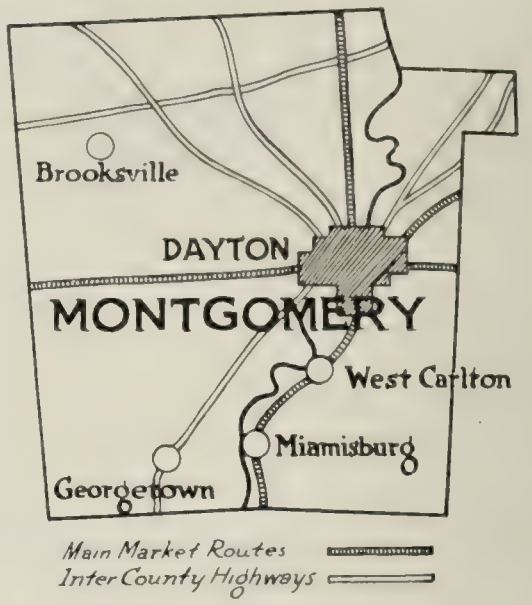
The work has been done under the joint direction of



County Surveyor, Victor C. Smith, Laying the First Brick on Covington Pike.

Division Engineer Harwood Lersch of the State Highway Department and myself. We have endeavored to make the construction methods a model for the entire state. The base is of concrete in which only screened gravel was used, the sand being added afterward. We have realized that good grouting adds to the life of a brick pavement and believe that by careful application of the grout, the surface will become smoother rather than rougher under the stress of wear.

I do not hesitate to predict a life of twenty-five years for the brick roads constructed around Dayton this summer and they may last a much longer time. I believe that the main traveled roads should be substantially improved at all hazards. As the roads in question are close to Dayton, a great and thriving industrial center, I consider that brick was preeminently the type of road for this situation.



Of course we have not solved the road question for Montgomery County, but we have made a scientific and systematic start. Whatever else has been accomplished, I feel certain that a definite plan of market roads on which the resources of each succeeding year can be expended, definitely ends the era of hit-or-miss road improvement. The people henceforth will demand that a road improvement starts somewhere and point in a definite direction. On such a road, liberal expenditure is both an investment and an economy.

Dayton is not a stranger to the merits of paving brick, for it has several excellent brick streets within its city limits which withstood the effects of submersion during the recent flood without any visible harm. It was a severe test on paving in which some other types were practically destroyed. The flood, of course, marks an epoch in the history of Dayton. But the spirit of co-operation and efficiency is stronger today than ever before and the demand for nothing but the best in highway improvements is a conspicuous place of sentiment in the reawakened "Gem City."



North Main Street, Leading to Covington Pike. From the Bustle of the City to the Quietude of the Countryside There Is no Jar in the Transition by the Ending of Good Roads and the Beginning of Bad, to Mar the Enjoyment of a Drive Into the Country.



Lexington Avenue, One of Dayton's Fine Brick Thoroughfares in the Residential District, Most of Which Withstood the Recent Flood Without Harm.

Reaching the Farmer

The Fourth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER X.

How Dealer Distribution Could Be Improved.

IF there is a wheel in the manufacturer's selling machinery that needs attention, it is the country dealer. His value in the marketing of clay wares to the farmer should not be under-estimated.

It is true that the dealer has many faults, for he is, like all of us, human, but a great many of the shortcomings that are charged up to him can readily be traced back to the manufacturer who gives this part of his selling organization too little attention.

The average manufacturer in lining up a new dealer, gets him to put in a stock of—let us say—drain tile. He agrees with the dealer on a price which he believes should leave the dealer a satisfactory margin and then goes back to his office and waits for the dealer to send him another order. In the meantime the dealer is handling a dozen other commodities and pushing hardest those in which there is the biggest profit. He is not in business for his health. He has tacked up his shingle to make money and there is nothing in the world that will make him push any product if there is no profit for energy expended in that direction.

Of course, there are some dealers who are just downright lazy or who get so interested in local politics or the county fair that they do not have time to attend to business. For instance, the following incident came to the attention of the writer and it illustrates this point:

The editor of a farm journal was in a small town waiting for the train. Close by was an implement and hardware store—the store of a typical small town dealer. In front of the store were two chairs, occupied by the dealer and a friend of his who was a candidate for sheriff. The dealer and his friend were both smoking two-for-a-nickel stogies, no doubt supplied by the would-be sheriff.

Along came a farmer who was interested in a grain drill and who had practically decided to buy one. He approached the dealer with the question, "Jones, do you handle grain drills—guess I'll have to have one." "Yes, I handle drills; want to see one?" You see, the dealer didn't expect that the farmer really wanted to see the thing he was going to buy. "Yes," promptly answered the farmer. "Well," said the dealer, "you will find them out there in the shed." "Back of the store?" asked the farmer, when he really ought to have known, for he lived right near town.

"Yes, go right down that walk, and turn to your left. The drills are on the right side as you go in." The farm journal man, having heard the conversation, followed the farmer down to the shed. Sure enough there were the drills. Here the grain box, there the bright red tongue, and here the wheels and there the drill hoes. If the farmer had had time he could have assembled a drill and had a good look at it; but for some reason he was in a hurry. He glanced about the shed for a few minutes and then departed for parts unknown—so far as the dealer was concerned.

This is one of the things for which the manufacturer of clay products should keep a sharp lookout. It is not a difficult matter to single out the "dead" ones and replace them with hustlers. Other things being equal, the diminishing of the stock pile in the dealer's yard and the record in your order book are good indications of what he is doing for you.

But how are we going to make it more interesting for the dealer? What shall we do to make him push our products harder? We will not do it by making our prices lower, even though we were willing to do so. The slight cut that we could make would make a big difference to us, and a very small difference to him.

The answer is, once more, co-operation. This time, it is co-operation with the dealer. We must look upon him in the light of a salesman that we have hired to cover a certain territory for us. Granted that he is not like a man on salary, still he is very like a man on commission—he makes a profit on our goods *if he sells them,* and the amount of his profit is in accordance with his ability to get a fair price and to sell a fair quantity.

If you hired a salesman, and made him travel out from your office, you would give him some help—would you not? You would figure that the more he sold for you, the more you would make. You would regard him as a part of your productive working force—something that cost you money to maintain, but, at the same time, something that brought your money back to you, with an added profit.

Let us dwell on this idea of salesmen a minute. Suppose you had two men, one a "junior" to whom you paid a certain salary, the other a "senior" whose salary was twice as much. Previous experience has taught you that the "senior" salesman sold twice as much as the "junior" and made twice as much profit for you.

Now, suppose that you have found that, by judicious advertising, by well designed and well written circulars, by keeping a good list of "prospects" and in other ways, you could, by the expenditure of about one-tenth of what you pay those two men, increase your sales, *made by them,* twenty per cent. You would consider that you had a very fair profit on the amount you put into salesmanagership, would you not?

Going back to the dealer. He deserves, in the first place, a price that is the same as that your salesman would quote, less the amount that those salesmen cost you in salary and expenses. Or, to make that plainer, you should fix the price you charge a dealer, and then, when you give your salesman a price, you should add to the price you ask a dealer, *the amount that your salesmen cost you, plus a reasonable profit on that extra cost.*

But the dealer's price should include enough to cover some advertising, some printed matter, some supervision, *made by you,* of the territory that the dealer covers for

you. You should give him the same support you would give a salesman who was drawing a salary. You should make him as efficient as a salesman that was regularly on your payroll.

You should give the dealer the benefit of the lowest price you can consistently make. *He should be made to pay promptly, and should be given a good discount for such promptness.* Since he "carries his own accounts" you can afford to be liberal with him—*he* helps you to carry *your* "slow payers."

Do not "play sharp" with your dealer. If a prospect comes up in a territory that is debatable—that the dealer has as much right to think his, as you to think otherwise—quote a high enough price to give you your profit, and allow the dealer a fair profit at the same time.

Do not load the dealer up, and then quote prices all around him that will compel him to sell what you have sold him, at a margin that will be too small to help him out with his hay and feed bills. Call on him, once in a while, and ask him how he likes your way of doing business.

If you feel that he will answer that question in a way that will hurt you tender sensibilities, be sure that there is as much wrong with your way as there is with his—*and get your way right*, before you insist upon his "getting busy" with your material.

Keep him supplied with literature. Make it the kind of literature that he will be glad to read, as well as give away. Remember, a lot of men in other lines are showing him, every day, that they are trying to help him sell their wares. If he feels that you are contented to ship him some tile or some brick, or whatever else you make, and then "lay down," waiting for him to send along some more orders, he may imitate you, and let your material lie until the birds build nests in it.

If you advertise, in local papers or in farm papers, add, after you name, "Write us, or See your Dealer." Don't be afraid they will buy something you don't make—don't expect a thousand dollar dividend on a hundred dollar ad. Advertising isn't mining stock—it brings sure returns, but slow.

In the next article, I will have something to say about the value of a central publicity bureau, in which the policy of selling through dealers will be given further discussion, and suggestions made that will be worth consideration. Some of the thoughts expressed will be entirely new to the clayworking industry.

Building the Model Residence in San Francisco

Much has been said in these columns and elsewhere, about the model, modern, low cost, fire-resistant residence that is being built at the Panama-Pacific International Exposition. Here, then, is ocular proof that it is being built, although the photographs were taken some time before the day when this picture first greets your eyes.

Work has been delayed, somewhat, by the rainy weather that has prevailed, but sufficient progress has been made to assure the promise that the outer walls would be complete by January 20—one month before the day set for the official opening of the exposition.

Progress photographs will be made, and it is hoped that, in the next issue of this magazine, pictures will be shown of the house, under roof, and a swarm of workmen busy on the inside, putting on the finishing touches, and as many more, completing the landscape gardening.

Arrangements are also under way for a booth 25x30 feet, in the Palace of Mines and Metallurgy, where literature will be distributed, telling of the virtues of brick.



Building the Model, Modern, Low-Cost, Fire-Resistant Residence at the Panama-Pacific International Exposition. This Illustration was Made from a Photograph Taken January 14—One Month and Six Days Before the Date Set for the Formal Opening of the Great World's Fair. Some Idea Can be Gained as to the Beauty of Its Surroundings and the Importance of Its Location.

American Ceramic Society's Annual Meeting.

The seventeenth annual meeting of the American Ceramic Society has been set for February 15 to 18 at Detroit, Mich. Arrangements have been made with the National Brick Manufacturers' Association which will hold its convention in Detroit, during the same week, for the society to hold its meeting beginning on Monday, February 15 and continuing to Thursday the 18th, during which time the brickmakers will also be in session. This is not in accordance with the plan pursued during the past two years, when the manufacturers and the ceramists divided the week between them for their sessions. It is thought that the return to the old custom will stimulate interest in the meetings of both organizations.

John R. Walsh Turns His Face to the West

CANADIAN brickmakers and their national organization are about to suffer a great loss. As has been announced, John R. Walsh, retiring secretary of the Canadian National Clay Products Association, intends to leave Toronto and take up his residence in California. In order that the world may know what sportsmanlike losers the Canadian brickmen are, it is well to record that the association tendered a banquet and theatre party to Ex-Secretary Walsh on Jan. 6, the former being given at the Prince George Hotel in Toronto.

John R. Walsh has served the Canadian National Clay Products Association most loyally for many years. His work has been largely instrumental in bringing the National Association to its present degree of effectiveness and his loss will be felt in the association work.

Fortunately, since it is well known that Providence "tempers the wind to the shorn lamb," the society has found a worthy successor in Gordon C. Keith, editor of the "Canadian Clayworker," and it is expected his present temporary appointment will be confirmed and made permanent by unanimous election at the coming convention, which will be held Jan. 26, 27 and 28 at Toronto.

Extensive preparations are being made in connection with this, Canadian convention, which promises not only a profitable, but a most interesting time to all who participate. Every possible effort is being made by the new secretary to secure a full and representative attendance, clayworkers from all parts of the Dominion being invited, irrespective of their holding membership in the association.



John R. Walsh.



Department Store Installs Fountain of Burned Clay

That an emporium where one may obtain anything from a thumb tack to a piano should be the site of a monument of the ceramic art is, to say the least, novel. Such, however, has been the case where a mammoth fountain was installed last spring in the center of the first or main floor of the new Kaufmann-Baer Department Store at Pittsburgh, Pa.

The fountain is a creation of the Rookwood Pottery Company, of Cincinnati, Ohio, and is shown in the accompanying illustration. Classic art figures wrought in burned clay adorn the basin at the top just beneath the clock, while similar figures are placed at four convenient spaces around the rim of the lower basin. From the latter water flows constantly into a larger floor basin in which several hundred gold fish have been placed. The entire creation is in colored art pottery and is the most novel and artistic fountain of its kind ever brought into Pittsburgh.

Coming Meetings That Interest Clayworkers.

Jan. 19 —Hollow Building Tile Manufacturers of America, Chicago (Hotel La Salle).
Society of Vitrified Clay Manufacturers, Chicago (Congress Hotel Annex).
Northwestern Clay Association, Minneapolis (Hotel Radisson).
Jan. 20 —Northwestern Clay Association, Minneapolis (Hotel Radisson).
Jan. 22 —Refractories Manufacturers' Association, Pittsburgh (Fort Pitt Hotel).
Jan. 26-28—Canadian National Clay Products Association, Toronto (King Edward Hotel).
National Association of Builders' Exchanges, Columbus (Virginia Hotel).
Feb. 3- 5—Chamber of Commerce of the U. S. of A., Washington, D. C. (New Willard Hotel).
Feb. 4- 5—Wisconsin Clay Manufacturers' Association, Milwaukee (St. Charles Hotel).
Feb. 8- 9—National Builders' Supply Association, Chicago, (Hotel La Salle).
Feb. 8-10—Illinois Clay Manufacturers' Association, Springfield (Hotel Leland).
Feb. 15-18—American Ceramic Society, Detroit (Hotel Statler).
Feb. 15-20—National Brick Manufacturers' Association, Detroit (Hotel Statler).

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Stack Sizes for Steam Boilers (Kent).

KENT'S TABLE OF SIZE OF CHIMNEYS FOR STEAM BOILERS.

Diameter Inches	Area in Sq. Feet	Effective Area	HEIGHT OF CHIMNEY: 50 feet	60 feet	70 feet	80 feet	90 feet	100 feet	110 feet	125 feet	150 feet	175 feet	200 feet	225 feet	250 feet	275 feet	300 feet	Same Area in Square Chimney, Giving Side of Square
			COMMERCIAL HORSEPOWER OF BOILER.															
30	4.91	3.58	84	92	100	107	113	119	....	....	....	....	....	....	....	....	....	27
33	5.94	4.48	...	115	125	133	141	149	156	....	....	....	....	....	....	....	....	30
36	7.07	5.47	...	141	152	163	173	182	191	204	....	....	....	....	....	....	....	32
39	8.30	6.57	...	...	183	196	208	219	229	245	....	....	....	....	....	....	....	35
42	9.62	7.76	...	...	216	231	245	258	271	289	316	....	....	....	....	....	....	38
48	12.57	10.44	...	...	...	311	330	348	365	389	426	....	....	....	....	....	....	43
54	15.90	13.51	...	...	...	...	427	449	472	503	551	595	....	....	....	....	....	48
60	19.64	16.98	...	...	...	...	536	565	593	632	692	748	....	....	....	....	....	54
66	23.76	20.83	...	...	...	...	...	694	728	776	849	918	981	....	....	....	....	59
72	28.27	25.08	...	...	...	...	...	835	876	934	1023	1105	1181	1253	....	....	....	64
78	33.18	29.73	...	...	...	...	...	...	1038	1107	1212	1310	1400	1485	1565	....	....	70
84	38.48	34.76	...	...	...	...	...	...	1214	1294	1418	1531	1637	1736	1830	1919	2005	75
90	44.18	40.19	...	...	...	...	...	...	....	1496	1639	1770	1893	2008	2116	2219	2318	80
96	50.27	46.01	...	...	...	...	...	...	....	1713	1876	2027	2167	2298	2423	2541	2654	86
102	56.75	52.23	...	...	...	...	...	...	....	1944	2130	2300	2459	2609	2750	2884	3012	91
108	63.62	58.83	...	...	...	...	...	...	....	2090	2399	2592	2771	2939	3098	3249	3393	96
114	70.88	65.83	...	...	...	...	...	...	....	....	2685	2900	3100	3288	3466	3635	3797	101
120	78.54	73.22	...	...	...	...	...	...	....	....	2986	3226	3448	3657	3855	4043	4223	107
132	95.03	89.18	...	...	...	...	...	...	....	...	3637	3929	4200	4455	4696	4925	5144	117
144	113.10	106.72	...	...	...	...	...	...	....	....	4352	4701	5026	5331	5618	5893	6155	128
156	132.73	125.82	...	...	...	...	...	...	....	....	....	5542	5925	6285	6624	6948	7256	138
168	153.94	146.50	...	...	...	...	...	...	....	....	....	6454	6899	7318	7713	8090	8449	149
180	176.71	168.74	...	...	...	...	...	...	....	....	....	7433	7946	8429	8884	9318	9732	160
192	201.06	192.56	...	...	...	...	...	...	....	....	....	....	9068	9619	10138	10633	11105	170
204	226.98	217.94	...	...	...	...	...	...	....	....	....	....	10263	10885	11475	12035	12569	181
216	254.47	244.90	...	...	...	...	...	...	....	....	....	....	....	12233	12894	13523	14123	191
228	283.53	273.53	...	...	...	...	...	...	....	....	....	....	....	....	14396	15099	15768	202
240	314.16	303.53	...	...	...	...	...	...	....	....	....	....	....	....	....	16761	17505	213

This table covers stacks up to 20 ft. in diameter and 300 ft. high. The sizes corresponding to the given commercial horse-powers are believed to be ample for all cases in which the draught areas through the boiler-flues and connections are sufficient, say not less than 20 per cent greater than the area of the stack, and in which the draught between the boilers and the chimney is not checked by long horizontal passages and right-angle bends.

The figures in the table correspond to a coal consumption of 5 lbs. of coal per horse-power per hour. This liberal allowance is made to cover the contingencies of poor coals being used, and of the boilers being driven beyond their rated capacity. In large plants of economical boilers and engines, good fuel and other favorable conditions, which will reduce the maximum rate of coal consumption at any one time to less than 5 lb. per horse-power per hour, the figures in the table may be multiplied by the ratio of 5 to the maximum expected coal consumption per horse-power per hour. Thus, with conditions which make the maximum coal consumption only 2½ lbs. per hour, the stack 300 ft. high by 12 ft. diameter should be sufficient for $6,152 \times 2 = 12,310$ H. P.

Handy Belt Information.

To find the length of belt required, multiply the sum of the diameters of the pulleys by 1.57 and add twice the distance between the shaft centers.

To find the speed of the belt, multiply the diameter of either pulley in feet by 3.1416 and the product by the number of revolutions of the pulley per minute, and the result obtained will be the number of feet that the belt runs per minute.

Remember that, when the belt is running at a high rate of speed, the centrifugal force of the belt has a tendency

(Continued on Page 176.)

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

"Five Per Cent" Increase Becomes Forty-four Per Cent.

The Perrysburg Tile and Brick Company, of Perrysburg, Ohio, has written us a letter relative to the advanced freight rate on drain tile, from Toledo, Ohio, to various Michigan points. Here is a case that makes the "five per cent" rate advance dwindle into insignificance, for this advance is more than 44 per cent. The letter, which bears the date of Jan. 14, follows:

On and since August 19, 1909, we have shipped drain tile from Toledo, Ohio, to Erie, Detroit, Saginaw, Merrill, Wheeler and Breckenridge, Michigan, over the Pere Marquette Railway, using the local mileage commodity freight tariff, I. C. C. No. 2126, which went into effect on the date above named, and I. C. C. No. 3029, effective January 7, 1913.

These tariffs gave us a rate of 4½c per cwt. to Detroit and 6c per cwt. to Saginaw, Merrill and other points. In addition to these rates we prepaid the T. B. G. & Southern Electric's switching charge of $3 to $4 per car.

During the years that the above rates were effective we built up a good business and we have a good many customers along the route of the Pere Marquette from Toledo to Breckenridge, and also points more distant, such as Coleman, Mich., and Bay City. The building up of this business has cost a large amount of time, money and energy; our factory has been enlarged and our capacity has been increased to take care of the growing demand for our products.

Now gentlemen, on October 14, 1914, tariff I. C. C. 3340 became effective, and the rate from Toledo, Ohio, to Detroit, Mich., is made 6½c, and the rate to Saginaw, Merrill, Wheeler and Breckenridge is made 9c per cwt. The commodity tariff has been eliminated and the railroad is now collecting 100 per cent of the 6th class rate.

And on top of this, the Interstate Commerce Commission's ruling makes us pay the T. B. G. & Southern Electric Ry. $5 per car instead of $4 on all interstate shipments.

Now we contend that these advanced rates from Toledo, Ohio, to the above named points and to intermediate points on the Pere Marquette Ry. are exorbitant, unreasonable and prohibitive and we feel that we should ask the Interstate Commerce Commission to suspend the advanced rates pending a hearing, at which we will be able to show the truth of our contention.

We believe the Commission should order the issuance of commodity tariffs on drain tile, rating it at 70 per cent of the 6th class rate, and we are ready to file a case immediately, if your Mr. Preetorius thinks we have a chance of being successful. Please give this matter your careful consideration and let us have a reply, if possible, by return mail.

If we file a case we will want it filed at once, and we will ask for a refund on goods shipped under the new rates, and upon which the new rates have been collected.

If any of our readers have been affected by the same tariff, it might be well to arrange some sort of a joint action, that will reduce the individual expense and, at the same time, show a disposition to do something, instead of sitting back and picking plums off another fellow's tree.

Has Syndicate System of Sales Letters.

F. A. Bolduan of Bruno, Sask., writes a very interesting letter and one which merits the careful attention of every clay manufacturer. Under date of Jan. 11th he says:

Your articles on "Reaching the Farmer" are very interesting and I have found a great deal in them that I believe will be useful in the future. My attention was particularly drawn to the mention made in the last installment of the need of some system whereby clay products manufacturers could improve their correspondence methods.

Having been engaged in brick manufacture for several years, no one has realized more keenly than I how the lack of advertising has hurt sales and how the utter absence of other sales data such as properly worded follow-up letters and properly printed literature has killed prospects that could have been turned into orders.

Fortunately, for many years prior to my going into the clay field, I was engaged in fields that demanded advertising of every description. This has given me a foundation upon which to build a comprehensive system of handling the sales of clay products.

I am now developing a system which I hope to be able to offer the clay products manufacturers within a very short time. It will consist, in the main, of what might be called "form" sales letters but which, being written by an advertising man who is thoroughly acquainted with the manufacture and sale of clay products, will be just as intimate and as closely in touch with the factory and with the customer as though it were a case of an individual prospect and an individual manufacturer.

It is my idea that a letter of this kind, sent out to, perhaps, five hundred manufacturers of brick and tile, and at one time, would give each manufacturer something which would be worth hundreds of dollars to him and yet cost him a very small sum. I am carrying into this idea all that I have learned of the spirit of co-operation which means small cost on account of the large number who contribute, and great value on account of the fair sum paid for expert services.

I hope to write you more regarding this matter and to give you a complete announcement of my system, which I hope will be ready for publication by the time your next number is ready to go to press.

If any of our readers are interested in this matter, they can address Mr. Bolduan, care of "Brick and Clay Record," as he writes that he expects to be in our office during the next week or ten days. His letter is, in a way, a surprise, since when we published the lines which spoke of the lack of proper sales letters, we had no idea that any clay manufacturer had already given this matter his thought, and certainly we did not know that he had gone so far as to develop a syndicated system for this very purpose.

Brick vs. Cement Stucco.

W. Yorgensen, of the New Jersey Terra Cotta Company, with offices in the Singer Building, New York, writes, under date of January 14:

While speaking to a gentleman last night, he inquired

(Continued on Page 177.)

Questions and Answers

Here Are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Burning Oil in a Continuous Kiln.

581. *Texas—We are interested in a Hoffmann type continuous kiln which could be oil-fired, and we would like to see an article in your magazine on the subject, telling us how the oil could be applied most effectively—whether from the top or bottom. Can you tell us if it is practical to set dry-press fire-brick direct, in a Hoffmann kiln, which has no special water-smoking flue? The clay stands rapid heating.*

The above question was published in the Dec. 15, 1914, issue, and since that time we have received two replies which will probably interest our readers. The first of these is from Wm. A. Butler of San Francisco, Calif., who writes as follows:

"The gentleman from Texas wants to know how the oil can be applied most effectively—whether from the top or from the bottom. I have seen brick burned with oil fuel in a continuous kiln where the oil was applied from the top but I have always contended that the top firing oil-burning system is a wasteful one. Top firing, as it is usually done, is simply dropping oil from the upper kiln floor upon and among the brick. The Hoffmann kiln was made for coal fuel (screenings). To burn oil effectively it must be atomized. In order to burn the oil properly so that it will reach all of the brick that are being burned and so burn them to a certain degree of evenness, we must, of necessity, burn these brick from the bottom.

"There are, however, two other essential points that must not be overlooked—the first of these is that the burning system must be so arranged that it will utilize the heat from the cooling brick as air for combustion and not be a direct fire.

"The second is that the air of combustion for oil-firing is a greater quantity than that which is used for coal fuel and the oil fuel must be as free from water as is possible; therefore, the use of steam should be avoided excepting for heating the oil.

"The Hoffmann kiln for dry press brick should have from two to three times as many dampers as for soft or stiff-mud brick in order that the brick may be dried off effectively.

"If a water-smoking flue is wanted, it should not be less in cross-sectional area than ten per cent of the kiln section and the waste heat should be taken off as in the Haigh (Hoffmann) kiln."

Ernst Schmatolla, author of "Firing and Burning" which appeared in this magazine, writes as follows:

"Firing continuous Hoffmann kilns with oil can be done in a way similar to that used when slack coal fuel is used, which is through holes in the top of the kiln, under which vertical shafts are arranged in the setting and connecting at the bottom with trace-holes or flues, running in the direction of the tunnel.

"The chief difference is only that the fuel is not thrown into the shaft at equal intervals of time as is done with coal fuel but continuously atomized and fed into the fuel shaft by means of high pressure or steam, as shown in connection with clamp kilns in Chapters X and XI of 'Firing and Burning.' It is evident that if the jet is working downward from the top, the flame will easily reach the bottom of the tunnel, the trace holes or flues acting to secure an even distribution of the flame throughout the entire area of the tunnel.

"Otherwise the kiln may be the same as described in Chapter XIV and illustrated in figures 90 to 94. It is understood that as soon as the surrounding brick are sufficiently burned, the oil burning device will be drawn out and inserted into the next following series of feed holes, the same as is done when working with a solid fuel.

"The manner of supplying the air for combustion of the oil depends upon the temperature at which the brick or other clay ware is to be burned and upon other varying circumstances.

"For burning brick which cannot stand a high temperature, it may be better to burn the oil with cold air, forcing it into the kiln from the outside by the drawing action of the jet; the hot air from finished and cooling ware may be drawn into other sections of the tunnel that have been filled with green ware for water-smoking.

"In this case it may also be better to use steam for atomizing and diluting the oil but for burning at high temperatures, for instance, for fire-brick, it will prove more profitable to use the hot air from the finished and cooling sections of the tunnel to aid the combustion of the oil and to use a Koerting or other high pressure jet which atomizes the oil without diluting it (see figure 52, Chapter X). A further increase of the temperature may be obtained by heating the oil before it is fed into the kiln.

"Zigzag kilns, being a variety of the Hoffmann kiln, may be fired with oil in a similar manner."

Thinks Slate Will Make Brick.

638. *Arizona—Some friends of mine are interested in a slate deposit near here and a recent analysis shows the following:*

Aluminum	(Al_2O_3)	22.4 %
Silica	(SiO_2)	65.8 %
Iron	(FeO)	5.58%
Magnesia	(MgO)	1.8 %
		95.58%

This slate is such that it cleaves well and if the quality is all right it can be handled so far as working it is concerned. Do you think from this analysis that it would make a good quality of pressed brick?

There is no way in which we can predict the action of a mineral from chemical analysis.

We may hazard a guess and in this instance our guess is that the silica is too high, the alumina too low and—this is

no guess—the working qualities of slate or metamorphosed shale are zero.

There are slates and other minerals that, seemingly, have the same chemical composition as clays that have proved useful while, at the same time, the physical nature of these slates has destroyed the value from a clayworking standpoint.

Wants to Know About Insurance.

631. *Ohio—We have been asked, when renewing our fire insurance policies, to insure ourselves with the "Manufacturers of Clay Products Reciprocal Insurance Bureau," of St. Louis, and take the liberty of asking if you know anything about that concern. We enclose their letter to us for your perusal, and ask that you return it to us after you have read it.*

All of the information we have thus far received indicates that the concern named is trustworthy and deserving of support. We believe that a number of clayworking concerns have been insured with it, and that, up to this time, their relations have been friendly. The names of the men who act as an advisory committee are those of men well known in the brickmaking business, and this, alone, should inspire confidence.

Location of Hoffmann Kilns.

596. *Alabama—Can you tell me where I can get a line on the Hoffmann type of kiln? Are there any of this type of kiln in use in eastern states and if so, where are they located?*

The above question was published in the Dec. 1 issue. Since then we have received the following from Ernst Schmatolla, 150 Nassau St., New York City:

"There are many kilns in this country which are based upon the Hoffmann system but which are not called Hoffmann kilns. Since Hoffmann died, many years ago, many kilns of this kind, some more and some less improved, were built by various kiln builders who introduced these kilns under their own names. The only genuine Hoffmann kiln that I know of was in operation many years ago at Riverton, Va., where it was used for burning lime. The chances are that it is still in existence, even though it may not be in operation. It is a circular kiln with a shaft in the center. In Germany most of the lime rock is still burned in Hoffmann kilns and there are very few of the improved brick yards in Germany that do not use kilns based upon the Hoffmann system."

Wants to Insure Idle Brick Plant.

637. *Indiana—We have a fire-brick plant that has remained closed for the past three years. It is enclosed and locked. Will you tell us if we can secure fire insurance on the building and on the machinery that is contained in it, while the plant remains idle. It has never been insured.*

Gardner Read, an insurance expert in Chicago, advises that, since the above inquiry does not give the necessary description of the property and location, it is impossible to say whether the plant has been rated, or what the rate would be. It is also impossible to say whether an insurance contract or "policy" would be written by any reputable company. If the physical condition of the property is such that a good company would offer you protection, and at a rate that would be within reason, it would appear that you would have been solicited and rates given long before this. Agents and insurance companies are not apt to let desirable business go unsolicited. A brick plant that has been closed for three years is not easily insured, and the rate would be high. Many companies decline to take risks of this kind, as past experience has shown them to be unprofitable.

Wants to Buy Seger Cones.

632. *Indiana—Please let me know where I can buy the cones that are used to determine temperatures.*

Write to Edward Orton, Jr., "Cone Factory," North High St., Columbus, Ohio, telling him at what temperature your ware matures, and asking him to furnish you with the proper cones to determine your heats.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

FOLLOWING on the article published in the last issue of "Brick and Clay Record," in which was pointed out that the "five per cent" rate increase might mean "eighteen per cent" or more, comes the decision of the Interstate Commerce Commission, which reads:

"On brick, clay and articles grouped therewith in present tariffs, to points in central freight association territory and Illinois, and on the Mississippi River, rates from Western Pennsylvania, West Virginia, Central, Southern and Eastern Ohio, and the Ashland (Ky.) group, may be established differentials under Pittsburgh," and, in addition to this, "It is ordered that, in establishing the increased rates approved in said reports, respondents may preserve these existing groupings and relationships as

(Continued on Page 192.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

USERS of Brown pyrometers will be interested in learning that the Brown Instrument Company is now located in its new factory at Wayne Junction, Philadelphia, Pa. The factory is a new two-story brick building in which the manufacturing department is located on the second floor, while the first floor is given over



Fig. 1

to the office, the receiving and shipping rooms, and to a locker and wash room for employes; also on this floor is the power plant, which supplies the current for both lighting and power throughout the entire building, with an auxiliary arrangement so that, should this be thrown out of working order, the city current can be used temporarily.

In laying out the equipment in the manufacturing department, the arrangement has been worked out so that the work passes in a continuous circuit, thus avoiding unnecessary loss of time in transit. The inspection depart-



Fig. 2

ment is located at the center of the floor, the machine shop being located on one side and the assembling department on the opposite side. Windows communicating with both departments are provided so that the inspectors can receive work from either the machine shop or the assembling room. All work receives a double inspection. Parts made in the machine shop are handed in through the window of the inspection department where they are looked over to make sure that they fulfill all requirements, after which they are passed on through the window at the opposite side to the assembling department, where the work of putting together the component parts of the instruments is handled. After each instrument is finished in the assembling department, it is sent back to the inspection room where it is carefully tested before being shipped.

The accompanying illustrations show the machine shop, the inspection department and a section of the laboratory for assembling. In reference to the machine shop, Fig. 1, it may be stated that the most modern forms of motor-driven equipment are provided for handling the light machining operations involved in the manufacture of this company's products.

On the left-hand side of the view of the inspection de-



Fig. 3

partment, Fig. 2, the work of testing pyrometer couples is shown. For this purpose five of the couples to be tested are placed in a furnace with a standard couple which has been calibrated by the Bureau of Standards, Washington, D. C. The temperature of the furnace is gradually raised and the indications of each couple are compared with that of the standard couple by means of a switch which enables, first the standard couple, and then the couple which is to be tested, to be connected with the indicating instrument. Any inaccuracies which are discovered in this way are corrected and subsequent tests are made until the required degree of accuracy has been obtained.

Fig. 3 shows a general view of the assembling department from which an idea of the layout of the equipment can be obtained. In assembling the fine mechanism which forms a part of the Brown pyrometers, it will be evident that good light is an essential feature in securing satisfactory results. This requirement is well taken care of

in the new factory by having the work benches run around the sides of the room, where advantage may be taken of



Fig. 4

the natural light afforded by an ample window area. The most modern means of artificial illuminations also form part of the equipment, so that the work need not suffer on dark winter afternoons.

The modern, sanitary locker and wash room shown in Fig. 4, forms a part of the plant's equipment that makes for more efficient employes by providing comfort and convenience during working hours.

In going through this factory, the visitor is impressed by the fact that the building and its equipment, and the dispatch and care with which the work is handled and passed from department to department, is all that he should expect to find in a plant given over to the manufacture of high-grade scientific instruments.

Marion Machine Company's New Catalog

A very attractive booklet, containing much more than the mere description of machinery, is being distributed by the Marion Machine, Foundry and Supply Company, of Marion, Indiana. While it gives illustrations and text regarding the leading features in the Marion line, a large portion of the booklet is taken up with printed matter of a more general nature, having a bearing on power plant management and work. Several chapters on the values of different fuels are also given, and a very good article on the question of air supply in firing. Every clay plant operator should make it a point to write for this booklet and to read it, from cover to cover, when it reaches his desk.

"Questions and Answers"

Under this heading, and in this department (Machinery and Equipment)" Brick and Clay Record" inaugurates, with this issue, a new service that should be valuable to its readers and advertisers.

It will consist of printing (without disclosing the writer's name) of all letters that come to this office, asking specific information about clayworking machinery and equipment.

These letters will be published with a key number. Advertisers who wish to be put into communication with the authors of the letters may send answers to this office, addressed to the key number, care of "Brick and Clay Record." These letters must be in envelopes that bear the return card of the writer, as this forwarding service is for advertisers exclusively.

If the author of the inquiry cares to answer the advertiser's answer, he will do so. "Brick and Clay Record" will have done its part in bringing the two together.

The first letters follow:

1. Canada—Would you be kind enough to advise me by return mail where we can secure information regarding the construction of down-draft kilns? I desire information regarding the complete construction, both as to mason work and the mortar used. Perhaps you can refer me to a book that covers this thoroughly.

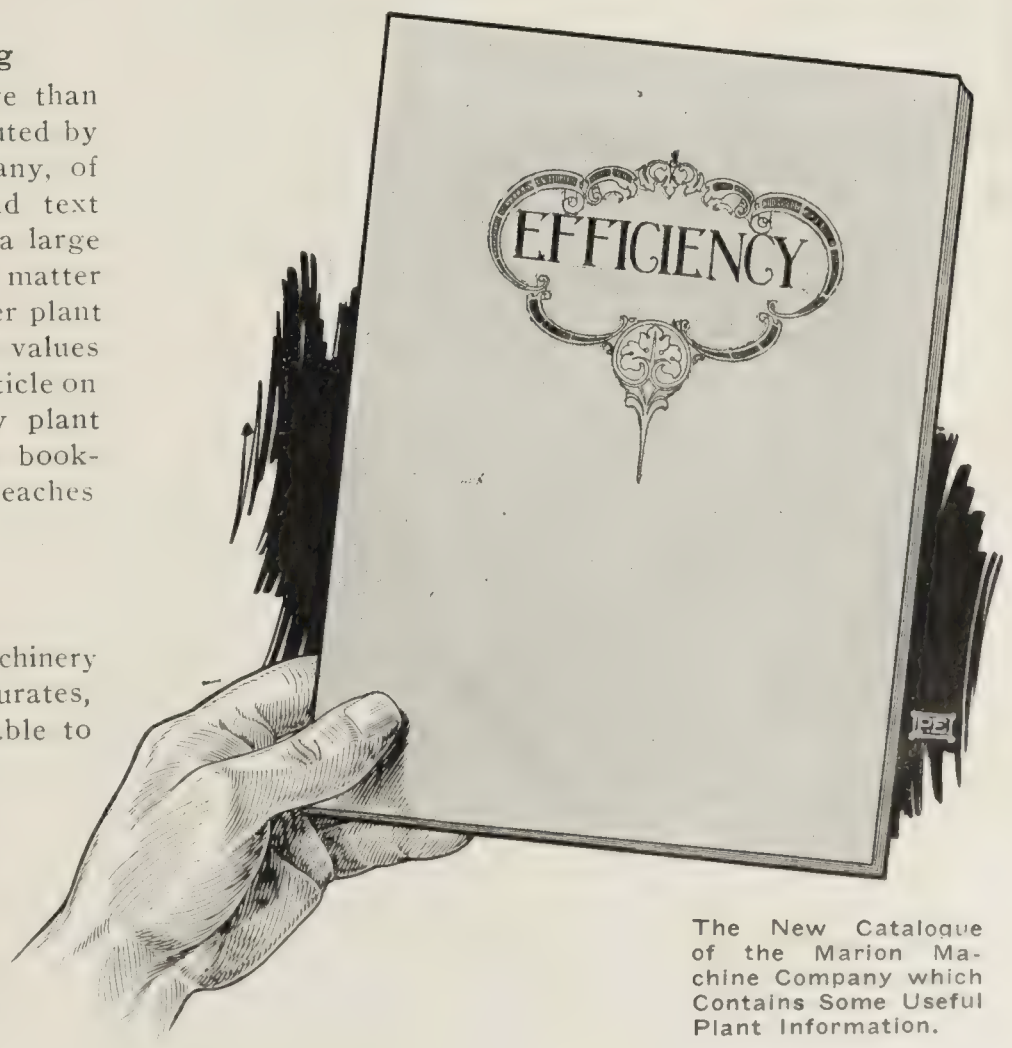
2. Indiana—Can you advise the writer as to the make of the brick machine and cutter, also of the represses that are being used by the best paving block manufacturers, for instance, the following: Toronto Fire Clay Company, Toronto, Ohio; Albion Shale Brick Company, Albion, Ills.; Alton Brick Company, Alton, Ills.; Bessemer Limestone Company, Youngstown, Ohio; Barr Clay Company, Streator, Ills.; Metropolitan Paving Brick Company, Canton, Ohio; Carlyle Paving Brick Company, Portsmouth, Ohio; Big Four Clay Company, Canton, Ohio; Purington Paving Brick Company, Galesburg, Ills. I will greatly appreciate it if you will give me this information.

In the past, we have answered inquiries of this kind by suggesting that the writers correspond with the men whose names they find in our advertising columns. This puts the burden on the man with an order to place. He may decide to wait. He may not care to write. He may not care to disclose his indentity, since an inquiry from him might bring an avalanche of salesmen and an obligation to "do business" quickly.

It may be that the newer method will serve another purpose. It will enable a man to secure information relative to machinery and equipment, without letting the whole world know that he is of that mind.

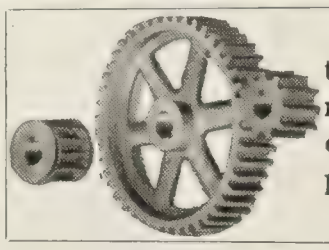
Inquiries similar to the above will be treated as confidential, so far as the writers are concerned, and should offer a

(Continued on page 193.)



The New Catalogue of the Marion Machine Company which Contains Some Useful Plant Information.

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.


Dodge Line means "Everything for the Mechanical Transmission of Power." The most efficient and economical method possible. DODGE MANUFACTURING COMPANY,
Works: Mishawaka, Ind. Branches Everywhere

Speed Up Your Plant
You can do this—and cut your coal bills, too. The
Sturtevant
(REG. U. S. PAT. OFF.)
Mechanical Draft System does this. Let us give you all the facts. Write for information. No obligation.
B. F. Sturtevant Co., Hyde Park, Boston, Mass., and all principal cities of the world

The DEWEY 5-Ton Locomotive
It never balks on heavy loads or grades
Why not let the Dewey do *your* work?
DEWEY BROS., Inc., Goldsboro, N. C.

SAVING
with Frink Pyrometers starts within one week of the receipt of your order. No interruption to the progress of your work. Ask us HOW.
The Frink Pyrometer Co. Lancaster, Ohio

DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

The Superintendent

(Continued from page 170.)

to remove it from contact with the pulley and thereby lessens the horsepower transmitted.

To find the horsepower transmitted by a belt running on pulleys of the same diameter, multiply the width of the belt in inches by the speed of the belt in feet per minute and divide by 800, if the belt is four-ply; if the belt is six-ply, divide by 600.

To find the width of belt to transmit a given horsepower where the pulleys are of the same diameter, multiply the number of horsepower by 800, if the belt is four-ply, and if the belt is six-ply, multiply the number of horsepower by 600—then divide by the speed in feet per minute.

To find the necessary speed in feet per minute to transmit a given horsepower with width of belt given, where the pulleys are of the same diameter, multiply the number of horsepower by 800, if the belt is four-ply, and if six-ply, multiply by 600, and then divide by the width in inches.

Conversion Factors.

Every once in a while an occasion arises when, in order to understand measurements that are given according to the metric system it is necessary to translate them into pounds, ounces, gallons, feet and other weights and measures. The following conversion factors may then be found valuable:

Millimeters × .03937	inches
Millimeters ÷ 25.4	inches
Centimeters × .393	inches
Centimeters ÷ 2.54	inches
Meters × 39.37	inches. (Act Cong.)
Meters × 3.28	feet
Meters × 1.094	yards
Kilometers × .621	miles
Kilometers ÷ 1.6093	miles
Kilometers × 3280.7	feet
Sq. m. m. × .055	sq. in.
Sq. m. m. ÷ 645	sq. in.
Sq. c. m. × .155	sq. in.
Sq. c. m. ÷ 6.45	sq. in.
Sq. meters × 10.764	sq. ft.
Sq. k. m. × 247.1	acres
Hectars × 2.47	acres
Cu. cm. ÷ 16.387	cu. in.
Cu. cm. ÷ 3.69 (U. S. P.)	fl. drs.
Cu. cm. ÷ 29.57 (U. S. P.)	fl. ozs.
Cu. meters × 35.314	cu. ft.
Cu. meters × 1.308	cu. yds.
Cu. meters × 264.2	gallons (231 cu. in.)
Litres × 61.023	cu. in. (Act Cong.)
Litres × 33.84	fl. oz. (U. S. P.)
Litres × 2642	gals. (231 cu. in.)
Litres ÷ 3.78	gals. (231 cu. in.)
Litres ÷ 28.317	cu. ft.
Hectolitres × 3.53	cu. ft.
Hectolitres × 2.84	bu. (2150.42 cu. in.)
Hectolitres × .131	cu. yds.
Hectolitres ÷ 26.42	gals. (231 cu. in.)
Grammes × 15.432	grains (Act Cong.)
Grammes ÷ 981	dynes.
Grammes (water) ÷ 29.57	fl. oz.
Grammes ÷ 28.35	oz. Av.
Grammes per cu. cent ÷ 27.7	lbs. per cu. in.

Joule × .7373	ft. lbs.
Kilo. grs. × 2.2046	lbs.
Kilo. grs. × 35.3	oz. Av.
Kilo. grs. ÷ 1102.3	tons (2000 lbs.)
Kilo. grs. per sq. cent × 14.23	lbs. per sq. in.
Kilo. gr. meters × 7.233	ft. lbs.
Kilo. per meter × .672	lbs. per sq. ft.
Kilo. per cu. meter × .026	lbs. per cu. ft.
Kilo. per Chevel × 2.235	lbs. per H. P.
K. W. × 1.35	H. P.
Watts ÷ 746	H. P.
Watts ÷ 737	ft. lbs. per sec.
Calorie × 3.968	B. T. U.

Letter Box

(Continued from Page 171.)

as to the advantage, price, durability, etc., between stucco, concrete and brick in building a residence. Personally, I prefer brick and talked brick, but I promised him that I would write you, and ask you to send him any data you might have on brick houses. I am enclosing his address and would ask that you write him at your convenience.

Very little literature has been published that comes within the request made by Mr. Yorgensen. The reason for this is that while brick has a history, cement-stucco and reinforced concrete have practically none.

The advantages claimed for brick are, therefore, based on actual performances, while the advantages claimed for cement-stucco and reinforced concrete are but guesses. This, of course, applies to the wearing qualities and to fire-resistance.

Brick has every advantage, when it comes to beauty, to warmth of color and to ability to "grow old gracefully." A brick house, built of vitrified brick, properly laid, should be more beautiful after ten years of weather, than the day it was built. This cannot be said of cement-stucco.

Brick is, we know, fire-resistant. After a fire the brick walls stand, practically as good as new. Concrete is not so good after a fire as it was before it passed through the flames. We know this—in brick yards, concrete dryers disintegrate because of the heat to which they are exposed, while brick built dryers stand indefinitely. Concrete stacks are impractical; brick stacks are one hundred per cent efficient.

Brick has a salvage. You can sell second-hand brick. You have to pay some one to tear down and cart away second-hand concrete. It is worse than useless; it cumbers the ground.

Cement-stucco on wire lath is a delusion and a snare. It is inclined toward being a fire-trap; it is bound to crack, to discolor, to become "old" while still young. Cement-stucco on hollow tile is excellent, except that the design of the house must be striking, or it is lost in the monotone. It needs "shades and shadows" and depths in the reveals that are not necessary in brick constructed houses.

Stucco on hollow tile is slightly cheaper than solid brick or face-brick veneered walls, but the difference is not more than five or ten per cent. This difference is well invested in brick, if the brick be well chosen and the brickwork well done.

Increased Efficiency *Greater Economy*

Results obtained from use of

"Fuller Quality"

Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways
Yellow Strand Wire Rope
Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.

PYROMETERS



"We take pleasure in handing you enclosed order of a duplicate installation of your equipment at our Findlay, O., plant. This installation to be placed at our Washington, Pa., plant."

The Findlay Clay Pot Co.

This is the inevitable result of a Stupakoff installation.

The Stupakoff Laboratories Pittsburgh, Pa.

"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel Rails and Accessories

Offices: Steubenville, Ohio

Mills: Newark, Ohio

BUCKEYE MEANS BEST — BEST MEANS BUCKEYE

All Sections from 12 lb. to 40 lb. per yard

Write or wire us, when in need.

No order too large to handle promptly or too small to secure immediate attention.

HERAEUS Le Chatelier PYROMETERS

"The Ultimate Pyrometer"

The peer of all instruments for measuring temperatures up to 3,000 degrees Fahr.

ACCURATE, RELIABLE, and the CHEAPEST in the end.

Furnished either INDICATING or RECORDING, in SINGLE or MULTIPLE Units.

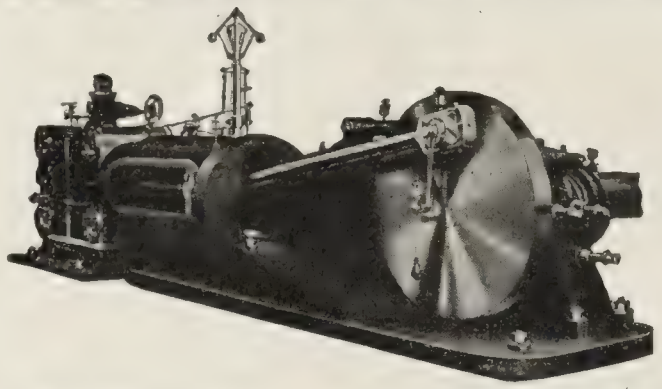
Our Reputation is Your Guarantee

Charles Engelhard

30 Church St. New York, N. Y.

POWER PLANTS COMPLETE

CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

PROVEN THE BEST



The Hinde-Dauch corrugated container is made in various sizes, for one or more brick. Saves time in packing and insures the receipt of your brick in perfect condition. Note in the illustration how thoroughly the corners and edges are protected

The Hinde & Dauch Paper Co.

Sandusky, O.

THE RICHARDSON-LOVEJOY ENGINEERING COMPANY

COLUMBUS, OHIO

CERAMIC ENGINEERS
FACTORY ARCHITECTS

GEOLOGICAL EXAMINATION OF PROPERTIES
CLAY TESTING
INVESTIGATIONS OF MANUFACTURING PROPOSITIONS
PLANTS DESIGNED, CONSTRUCTION SUPERINTENDED AND OPERATIONS DIRECTED
DRIERS, FURNACES, KILNS
REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
DEVELOPMENT OF NEW LINES OF PRODUCTS

Pamphlet, "Ceramic Engineering." Free



MORTGAGE money, the dominant factor in building prosperity throughout the country, is easier. In three boroughs of New York during the first two weeks of the year mortgage loans were still below those of 1914 in both volume and value, but the discrepancy was nothing like what it was in September, October, November and December.

Mortgage loans up to January 8 in Manhattan, Bronx and Brooklyn totaled 372, as against 537 in the same period last year, showing a loss of 165. In that period this year these mortgages totaled in value $2,523,359, as againt $3,447,877 in the same period last year, showing a loss in the first week of 1915 of $924,518 from last year's total. The first week in September, October, November and December, 1914, showed respectively values 28, 22, 19 and 11 per cent below the total for the first week in January. This indicates further easing of the building loan market in a part of the country where the effect of the war is most severely felt and where trade has been most stagnant. Attention is called to the gradual easing of money, especially in November and December following the reopening of the country's stock exchanges.

A canvass of the building material situation in the metropolitan district shows an estimated improvement of about $70,000 in prospective business that has developed since the first of the year. This sum, divided among the two hundred and fifty members of the Building Material Exchange, would not go very far toward relieving the depression in the eastern building material trade, but it is looked upon as a start in the right direction. Remembering that materials are being sold in the East very close to cost in order to keep mills moving, it is considered by some a fair showing for the dullest building period in the year.

Reports of building operations throughout the country indicate a general tendency to release some of the projects that have been held up. Of the $800,000,000 worth of buildings projected in 1914, it is estimated that about fifty per cent went ahead prior to July 31. In the last half of the year probably not more than thirty-three and one-third per cent went ahead. The remaining $267,000,000 worth of construction, therefore, may be expected to materialize early this year. Recalling that there must have been a demand for these structures ere they were projected, it seems safe to assume, that as soon as building money becomes easier, they will proceed.

In is interesting to note just what the tendency of money in general is and to note whether it harmonizes

with the trend of the mortgage market. Bank clearings throughout the country in the week ending January 7 aggregated $3,099,621,000, an increase of 33.4 per cent over the week preceding it. In the corresponding week last year they were twenty-two per cent higher, but that week did not follow one of the worst financial depressions the country ever has known.

Excluding New York city, the total was $1,435,902,000, a gain of 34.6 per cent, and a decrease against the clearings in the corresponding week last year of only 16.8 per cent and a decrease of only 12.3 per cent from the same week in 1913.

It is true that these are merely straws pointing the way the financial trend of the country is directed, but they indicate a movement that promises more favorable requirements for clay products and building materials in general.

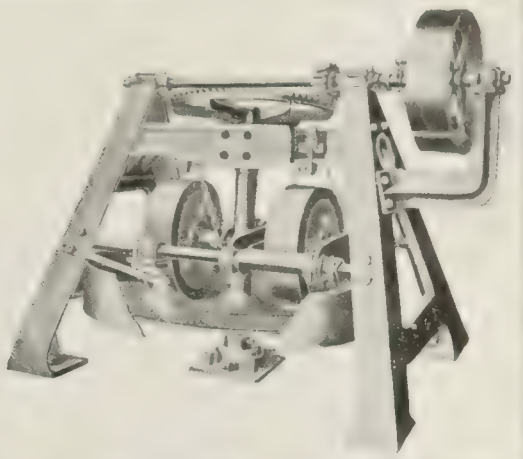
Taking the country as a whole, influences are working for good in all lines of activity. The freight rate increase allowed to the eastern railroads is having an important bearing upon the securities market both in New York and abroad. The South is encouraged by higher prices being asked for raw cotton around Birmingham, and New Orleans reports prospects good for large food crops. Baltimore reports that the Baltimore and Ohio Railroad Company has increased its mechanical forces. St. Paul reports European orders in heavy manufactured goods and a larger movement in cattle and hogs. Chicago reports improvements in money and a better tone in steel buying, indicating strengthening in building and equipment. Clay products are in moderate inquiry and light demand, but in fair conformity to the time of the year. Paving brick interests report promises of a better year than they have had in a decade, due to the gradual awakening of state engineers to the advantage of brick for automobile road paving. Seattle has little building activity now, but there is an inquiry, according to architects, that promises a fair building year. New England and New Jersey is promising much mill construction wherein brick may be largely used. New York construction seems to be centering on apartment houses and specialty buildings of the new show room and sample display type.

The early part of this year is developing a remarkable get-together spirit in all building construction and material circles. Factors that have been in estrangement in New York for years actually have joined hands in fellowship. The entire brick and clay working trade seems to be getting down to a basis of co-operation

Frank H. Graf of the F. H. Graf Manufacturing Company in New York, in stating his intention to go to attend National Tile Manufacturers' Association Convention in Baltimore next month, reflected the sentiment of clay interests when he said:

"We read everywhere that business is getting better. Maybe it is so in some lines. Ours is not the first one usually to feel the improvement, but what we all want to know is whether that optimism is just talk or whether it is fact. In half a day's chat with the fellows we know in the trade we can find out what truth there is in it all. We like to read about it, but we also want to know whether prosperity is on the way or not. If the other fellow is putting in new machinery, or overhauling his equipment, we want to know about it, because money is not usually spent on new machinery and improvements unless the investor can see some chance of it coming back very soon in increased business. I'm going to the convention because I want to find out what the other fellow is going to do this year."

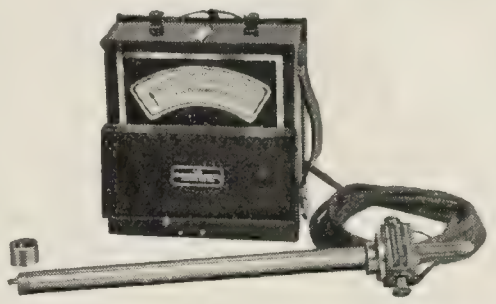
THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES, IOWA

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

Jackson & Church Company
Saginaw, Michigan

PERFORATED METAL SCREENS
As required for BRICK MAKERS USES.

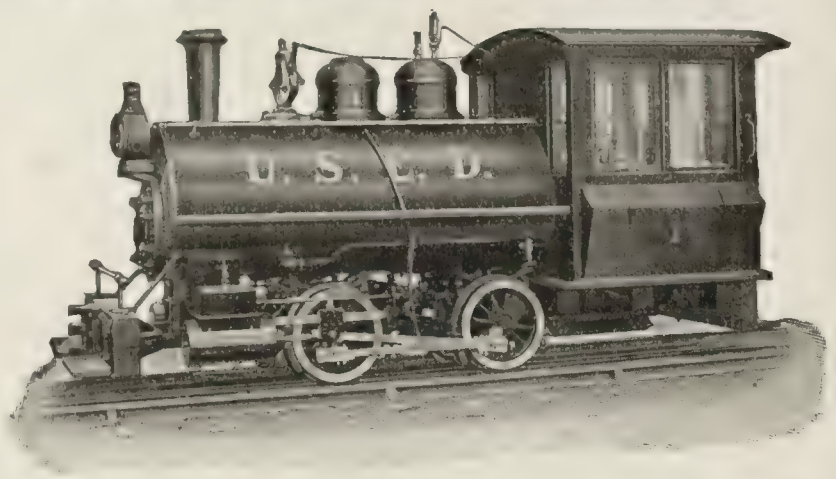


Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.
New York Office
Room 1023 Cortlandt Building

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers, for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation

and will reduce costs of delivering your material to your plant, thus increasing profits.

All About Modern Industrial Railways

Write us for particulars

Davenport Locomotive Works

DAVENPORT, IOWA

Branch Offices

St. Louis: 654 Pierce Bldg. — New Orleans: 208 Godchaux Bldg.
Chicago: 12 and 14 So. Canal St. — Pittsburgh: 405 Oliver Bldg.
Seattle: 617 Western Ave. — Montreal: 286 St. James St.
St. Paul: 1308 Pioneer-Press Bldg. — Winnipeg: 45 Canadian Life Block
New York City: 362—50 Church St. — Vancouver: 175 Cordova St.

POSTERETTES



The best, brightest, most attractive poster stamp that has so far been issued.

It carries the "Build with Brick" slogan everywhere your mail or express packages meet the eye of a prospective builder.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD

445 PLYMOUTH COURT CHICAGO

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

CALIFORNIA

The California Brick Company has moved its San Francisco offices to more spacious quarters on the ninth floor of the Phelan Building.

The Atlas Paving Brick Company of San Francisco, Cal., has levied an assessment of fifty cents per share on the capital stock of the company.

A paving brick concern that intends to erect a large plant at Richmond, Cal., has been in conference with Manager John Gerlach of the Los Angeles Pressed Brick Company, Los Angeles, Cal.

E. M. Prescott, of the Fresno Brick and Tile Company of Fresno, Cal., has submitted to the city trustees a proposition for the disposal of the city garbage. The plan of Mr. Prescott is now being considered.

The La Bolsa Tile Company, Huntington Beach, Cal., is planning to enlarge its plant by the installation of machinery for making roofing tile and bell pipe. If tests of the clay, which will shortly be made, prove satisfactory, the company will install machinery for the manufacture of salt galzed vitrified sewer pipe also.

The Shell Oil Company, which has a large number of oil pumping plants in California, has let several contracts for fire brick to the Stockton Fire and Enameled Brick Company of Stockton and San Francisco. The Shell Oil Company has heretofore used imported fire brick.

The Inglewood Brick Company, Inglewood, Cal., has changed hands, the present ownership selling out to new capital. Very little ware has been turned out at the new enameled brick plant and the old plant of the company for several months, but it is reported that under the new management, the whole plant will be in full operation very soon.

The Los Angeles Brick Company of Los Angeles, Cal., has won its fight against the City of Los Angeles, which had levied an assessment for street work against the property of the company to the amount of $5,000. The proposed change in the grade of Seventh street would have raised the street bordering the company's property twelve feet above the present level.

All the larger California cities show a falling off in building permits for the month of December, 1914, as compared with the same month of the preceding year. In both San Francisco and Los Angeles, the total valuation of the December, 1914, permits was the smallest for any one month in the last three years. Brick men believe that there will be a material improvement in January.

ILLINOIS.

The Hardstone Brick and Tile Company, Chicago, Ill., has been incorporated with a capital of $60,000 by Frank Euwecke, Alois Wende, Walter Neumeister and W. Schlumbum.

The Continental Brick Company, Aledo, Ill., reports a large volume of business during the past year and that the

plant will be in operation throughout the winter. About thirty homes, the dwellings of the plant employes, form a small village surrounding the plant, and a general store together with a new school house complete the community.

August Kloppenburg, at one time owner of a large brick plant at Springfield, Ill., died at the home of his son on January 7. Coming from a farm at Pleasant Plains, Ill., Mr. Kloppenburg started one of the first brick making enterprises in Springfield in 1855. After thirty years of activity in this business, he transferred his interests to two of his sons, one of whom survives him.

The Richards Brick Company, Edwardsville, Ill., is making extensive improvements at its plant, upon the completion of which it is expected that this plant will be one of the best equipped in Illinois. The production will be increased and a large storage shed for clay erected to permit the operation of the plant the entire year regardless of weather conditions. Early in the spring the company will purchase a storage battery truck to haul brick from the kiln to the cars. The truck will carry about 750 brick each load or something like two tons. It is necessary to install a plant to charge these trucks, which have the same power as the large motor trucks used in many delivery services. The truck will go through a four foot opening and may be driven into a freight car and backed out without any trouble. In addition to this, the company is already operating a gravity and electric railroad to carry clay from the fields a half mile from the plant.

INDIANA

At a meeting of the stockholders of the Crawfordsville Shale Brick Company, Crawfordsville, Ind., recently, a new corps of officers was elected, J. S. Herron being chosen president; C. L. Goodbar, vice-president, and G. V. Luckett, secretary-treasurer. The report of last year's business was highly satisfactory and showed an increase over that of former years.

During the past year, the Standard Brick Company, Evansville, Ind., built three new kilns at its west side yard to burn vitrified face brick. The capacity of this company is now thirty millions of brick a year which is eight million more than the city has ever laid in a period of any twelve months. The new vitrified face brick comes in shades from light red to brown and almost black. The first of these new brick were used in the new Lincoln hotel at Evansville.

IOWA

The Postville Clay Products Company, Postville, Ia., will raise its capital stock to $150,000 for the purpose of enlarging its plant.

KANSAS.

A $60,000 library building is to be constructed in Leavenworth, Kan. It will be of brick with stone trimming.

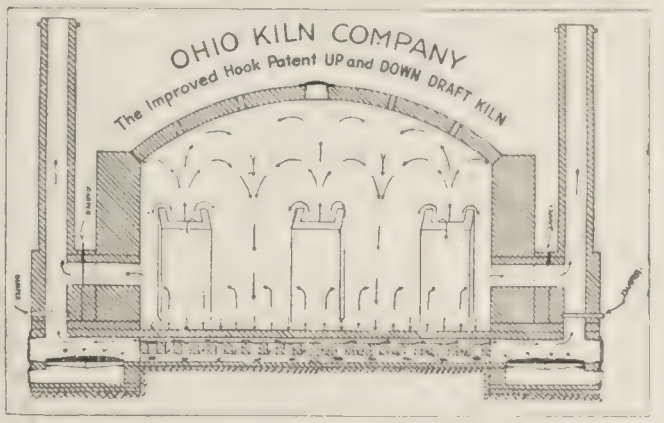
Architects Mann and Gerow, Hutchinson, Kan., are preparing the plans for a $60,000 school, which will be three stories in height, with a concrete foundation and brick superstructure.

Recent reports of the extent to which Kansas towns have paved their streets reveals that Sabetha, with a population of 1,973, has recently paved twenty-two blocks with brick, and will pave some thirty or more blocks this coming spring.

KENTUCKY.

Soldier Clay and Asphalt Company, Soldier, Ky., has been incorporated with a capital of $55,000 by Alva Sanders, S. M. Bradley and W. B. Whitt.

H. H. Frazer, sales manager for the R. B. Tyler Com-



BURNS EVENLY

Just as good ware taken from bottom as top.

No Damaged Ware from Water Smoking

Bottom pieces kept in perfect condition. Try the

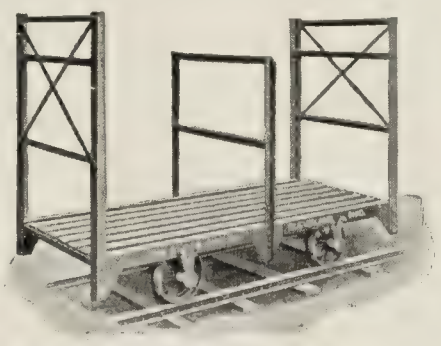
Improved Hook System

Don't White-Wash

But produces a nice clean uniform burn. Let us prove our claims—you have everything to gain and nothing to lose. Write for information.

OHIO KILN CO., VIGO, O.

Improved Hook Patent Kiln

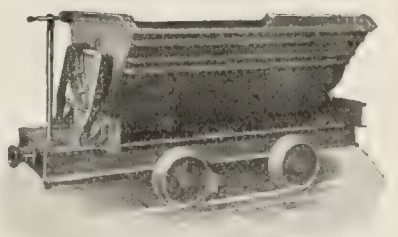


No. 1205
Triple Deck Dryer Car supplied with or without decks of wood or steel.

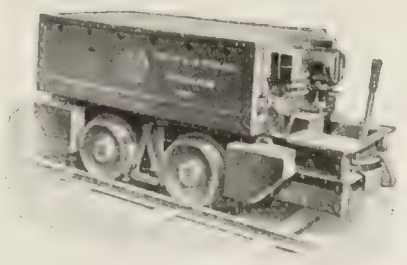
Reduce Your Handling Costs

by the Purchase of Efficient Equipment

ATLAS High Efficiency Cars and Electric Locomotives



Rocker Side Dump Car
Also made in end dump. Above car made for loading with steam shovel.



No. 5730
Storage Battery Locomotive. One end operated.

will meet your requirements.

Let us send you catalogue and quote prices.

The Atlas Car & Mfg. Co.

Dept. I
1287 Marquette Road, Cleveland, Ohio

WATER

for

Security,
Insurance
Reductions,
Tempering,
Boilers,
Sanitation,

in



Eagle Tanks - Towers

Increases Efficiency
Decreases "Shut-Downs"

Gives Fire Protection When Needed—Service Always

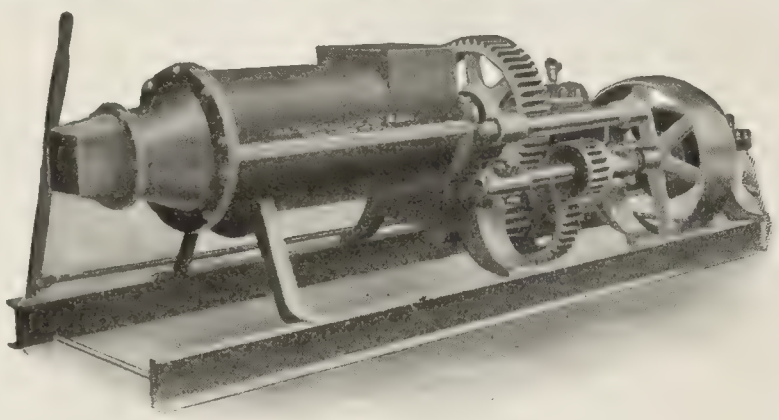
THE EAGLE TANK CO.

Chicago, Illinois

SCHULTZ EQUIPMENT

For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

Telephone Monroe 1629

We also make a complete line of Power Transmission Appliances, Engines and Boilers,

pany, Louisville, Ky., who has been in the infirmary for several weeks with an attack of typhoid fever, has recovered and is back on the job. Mr. Frazer is taking things rather easy just now, but is closing up brick contracts, as usual.

The P. Bannon Pipe Company, Louisville, Ky., recently secured a contract for furnishing hollow tile fireproofing on a $40,000 residence at Lexington, Ky., for which the Congleton Lumber Company has the general contract. Business with the company is improving and a good many jobs are in sight.

Local brickmakers are looking forward expectantly for the specifications of the new Y. W. C. A. building which is to be erected at Second and Walnut streets, Louisville, Ky. The plans are now being made up in the office of John B. Hutchings and will call for a fireproof building in which a large quantity of brick and tile will be used.

Louisville manufacturers of hollow tile fireproofing materials are delivering quantities of their wares on jobs now under way. Manufacturers of common brick are also fairly busy with deliveries on old contracts. New jobs are maturing very slowly just now, but a good deal of work is in sight for later on in the year. Drain tile is also in fair demand, due to the amount of drainage work done during the last few months.

Will P. Blair, of Cleveland, Ohio, secretary of the National Paving Brick Manufacturers' Association, recently delivered a very interesting lecture at the State University, Lexington, Ky., during the second week of the two weeks' course in highway engineering for road engineers of the state. Mr. Blair's address included two subjects: "Brick Roads" and "The Construction of Brick Streets." A number of tests of road building materials were also made during the two weeks' program.

Advertising in daily newspapers is a business-getting medium which is generally overlooked by the average brick manufacturer. The latter depends on the builder to select his brick either through the architect's office or the displays in some building supply company's show rooms. However, the Coral Ridge Clay Products Company, of Louisville, has shown originality in using an eighth of a page advertisement in local newspapers. The advertisement is headed—"Are you going to build?—If so, insist on having Coral Ridge Brick." The advertisement has undoubtedly attracted considerable attention because of its uniqueness.

Brickmakers of Louisville, Ky., are speculating on a recent recommendation of the Louisville Board of Trade concerning the improvement of the levee and wharfage facilities at Louisville. It is proposed to install a number of railroad switches along the wharves so that incoming or outbound freight may be transferred at Louisville from railroad to steamer without the necessity of draying. This would facilitate brick handling and also the receiving of sewer pipe on the part of the building supply concerns. A quantity of brick and sewer pipe now comes into Louisville from West Virginia, Pennsylvania and Indiana points, but practically all shipments come by rail because of the difficulty in delivering from the levee. Large shipments of paving or vitrified brick still come by barge, however, but are costly to handle because of the additional pull from the river front.

In the face of conditions heretofore unknown in the commercial world and while other sections of the country are complaining of business depression, prospects in

Louisville are holding up remarkably well. The annual report of the Louisville Clearing House is viewed as being a good record in the face of existing conditions. The total for the year was $667,106,632, which is $48,625,254 short of business handled during 1913, when the total reached $715,731,886. According to records on file, greater difference in annual clearings have been experienced in former years when conditions were normal and prosperity general. Local business men are very much pleased with the report which showed a greater volume of business than was expected. During the first six months in the year the total was normal and the losses date to the outbreak of the European war.

Announcement has been made of a change in the officers of the Coral Ridge Clay Products Company, Louisville, Ky., whereby O. B. Bergstrom, a banker of New York City, becomes president of the company, succeeding W. D. Roy, of Louisville. Mr. Roy will continue as a stockholder and director of the concern, but was unable to give the business the time he felt it deserved. Mr. Roy is also president of the Kentucky Bottlers' Supply Company and is interested in several other local enterprises. During the past year the Coral Ridge company has completed a number of improvements at its plant in the southern part of the county. The daily capacity has been raised to 60,000 brick. The company has its own power and lighting system and cottages for its employes. Offices are maintained in Louisville in the Inter-Southern building. The plant has been closed for two weeks but is again open and has orders on file which will keep it going for ninety days. The annual directors' meeting is to be held the latter part of this month, but the date has not been set as yet.

MARYLAND

A permit has been issued to John Vandergrift, Cumberland, Md., for the erection of a brick plant at Daysville, Md., for the Hamilton Brick and Tile Company.

MASSACHUSETTS

E. L. Cook, manufacturer of the "Diamond C" building brick, at State Farm, Mass., has issued a very attractive blotter, made of aluminum and plaster of paris. On it he carriers the slogan "When you Build, Build with Brick," and adds "And Use Diamond C."

Brick manufacturers in Greenfield, Mass., and other sections of western Massachusetts say that the year which has just closed was not entirely up to expectations because of the depression in the building trades. R. E. Pray made three million brick as against three and a half million in 1913. C. C. Dyer, however, turned out five million brick in 1914 which is about his usual production.

A large number of Boston and New England brickmakers are planning to attend the annual convention of the New England Builders' Supply Association which is to be held in Worcester, Mass., early next month. The convention will last two days. Charles M. Kelly of Providence, R. I., is secretary of the association. The New England brick manufacturers and dealers have no organization of their own, a large number of them being affiliated with the Builders' Supply Association.

MICHIGAN

The American Sewer Pipe Company, of Jackson, Mich., which has been shut down for some time, reopened January 4, with a force of sixty men.

John S. Haggerty, of the Haggerty Brick Company,

Dryer Cars

Made of cast iron, with steel axles and braces, to prevent warping in the dry kilns. The wheels are pressed onto the axles which are on roller bearings. A strong car and easily moved—in fact, just the car you need.

Pettigrew Dryer Cars have been used by Chicago's leading brick yards for years. We build them to give satisfaction to users.

We also maintain a large engineering department and pattern shop and are therefore in position to quote you on special cars or castings you need.

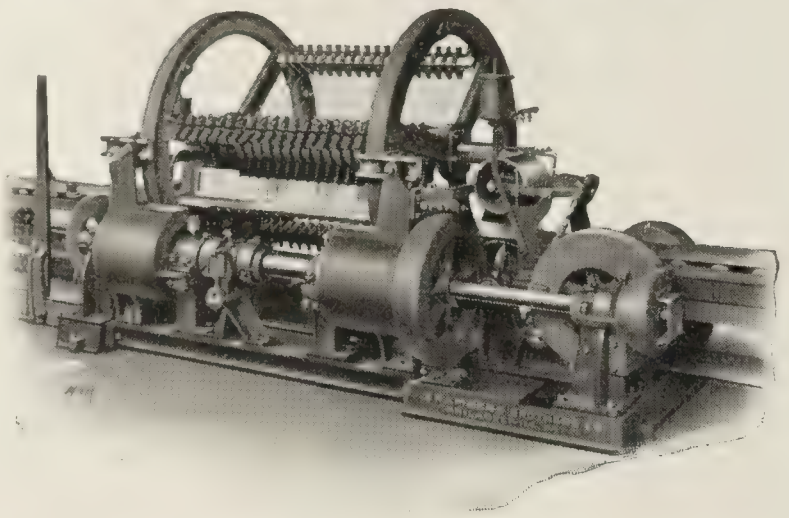
Pettigrew Foundry Co.

Dryer and Transfer Cars, Car Wheels, Turntables, Grate Bars and Kiln Grates.

Harvey, Ill.



New Multiple Brick Cutter



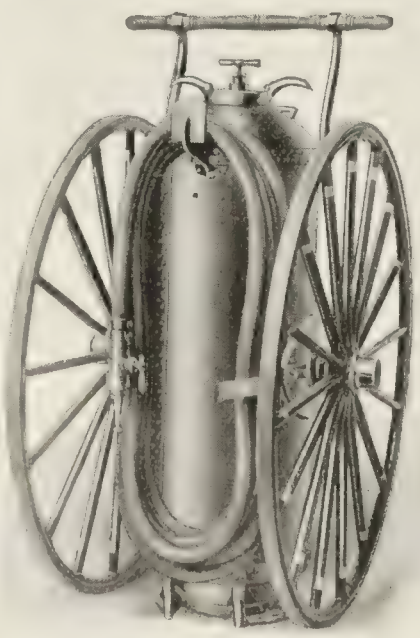
THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.
40 Liberty St.
UTICA, N. Y.

Detroit, Mich., attended the New York Automobile Show the first week in January.

John A. Mercier, brick manufacturer, has been elected president of the Detroit Builders' and Traders' Exchange. He was elected to the board of directors, as was John S. Haggerty, also a brick manufacturer.

The City Council of Kalamazoo, Mich., after several days of investigation and deliberation, has voted to establish a municipal brick yard to provide work for the needy married men of that city with families.

John Saul, said to be the oldest brickmaker in Detroit, Mich., died in his home on January 11. Mr. Saul came to that city from Germany in 1865 and served as foreman in a local brickyard for thirty-eight years.

Ground was broken on January 13 for a twenty-three story addition to the Penobscot building, Detroit. The addition will be erected in the rear of the present building, and will face West Congress street. Its total cost will be $1,500,000. The addition will be of steel, with an enameled brick and terra cotta exterior. The new structure, it is expected, will be completed by February 1, 1916.

A bill is to be introduced into the present Michigan legislature which will compel all building contractors to give a bond where the amount of the contract exceeds $2,000. Michigan brickmakers are interested in this proposed legislation, as in this way, it is believed that the unreliable contractor will be eliminated from bidding on various jobs involving brick.

The Ripley Brick Company will hold its annual meeting on January 25 at Laurium, Mich., at which directors and officers will be elected. This company is looking forward to a good season during 1915 after having enjoyed an unusually good year during 1914 in which its output was greatly increased.

The Cadillac Builders Supply Company, Detroit, has been organized with a capital stock of $50,000 to take over the business formerly operated by Closser Brothers. John W. Cullen is president and general manager of the new company, N. V. Cullen is secretary, and William Oakes, treasurer. Offices have been opened in the Campau building. Brick will be handled.

The Detroit Association of Brick Manufacturers and Dealers has issued a pamphlet having a red cover representing a brick wall with gray lines for the mortar. The pamphlet carries the caption, "A Made to Order Fire" and reproduces "Brick and Clay Record's" account of the Chicago Fire Prevention Day celebration on October 9. The pamphlet is sent to building contractors, architects and those contemplating any building where brick might be used.

Frederick B. Stevens, a Detroit brick dealer, is distributing a useful and attractive souvenir in the form of a paperweight. The face is an excellent mirror set in black metal, while the metal back contains a view of the Stevens factory building in black and white. The Stevens company is furnishing all of the brick for the Wagner Baking Company, which will be one of the largest plants of its kind in the country. More than 400,000 brick are being used. Five shades of red pressed brick were used on the exterior of the building and the effect is most striking. The interior will be of Ohio salt glazed brick.

According to William B. Wreford, manager of the Detroit Association of Brick Manufacturers and Dealers, building material men are looking forward to a busy year during 1915. The great majority of Michigan dealers are

optimistic over business prospects and are making plans accordingly. The brickmaking industry anticipates a big season, so much so that all of the plants contemplate an increase in output over last year. During the year of 1914 approximately 300,000,000 brick were manufactured in Detroit. With the new plant of the Mercier, Bryan, Larkins Company in operation, the 1915 output should be near 400,000,000 brick.

The Teamsters' Union, of Detroit, Mich., has passed resolutions condemning the use of asphalt and creosote block pavements and is calling upon the humane society of Detroit to add its protest against the extension of these pavements in that city. The Teamsters' Union claims that both asphalt and creosote block pavements are so slippery as to be unsafe for horses and that as a result, the teamsters persist in driving on the car tracks, where the horses can get a foothold and walk comfortably. The claim is that delays to street cars should be laid at the doors of those who are responsible for the construction of asphalt and creosote block pavements rather than at the door of the men who are trying to save their property by taking the safer brick footway that is used between the car tracks.

MINNESOTA

P. O. H. Lenz, for many years assistant secretary and assistant treasurer of the Hydraulic-Press Brick Company, at Minneapolis, has resigned his position with that company and is taking up a new line of business in the credit department of one of the large department stores of Minneapolis. Mr. Lenz has been in the service of the Hydraulic-Press Brick Company for nearly nineteen years and has been connected with the plants at St. Louis, Mo., Collinsville, Ill., Menomonie, Wis., and at Minneapolis, Minn.

The Twin City Brick Company, St. Paul, Minn., recently entertained its sales managers and traveling salesmen at St. Paul, one of the principal features being a banquet at the Commercial Club. W. Siwart Smit, treasurer and general manager, acted as toastmaster and gave the address of welcome. This was followed by short talks as follows. Fritz Koch, president, "Reminiscences"; Louis Koch, vice-president, "Service"; W. Siwart Smit, "Invisible Assets"; George Rathjens, vice-president, "Standard Specification of Building Brick"; William C. Koch, vice-president, "Bearing of Selling on Production"; J. D. W. Hall, Southwestern manager, "Landing the Order"; F. B. Martin, Minneapolis manager, "Attitude of the Company Towards Its Customers"; John T. Harrington, St. Paul manager, "The Salesman's Assets"; Leon V. Madsen, state manager, "Credits and Orders"; D. B. Porter, Omaha manager, "The Southwestern Situation"; C. V. Pierson, Duluth manager, "The Duluth Situation"; Carl C. McComb, Des Moines manager, "The Efficient Salesman"; Erwin W. Folsom, traffic manager, "The Value of Proper Routing." This was followed by short remarks by Robert W. Scott and Edward N. Rosengren of the St. Paul sales force and by William J. Meyer of the Minneapolis office.

MISSOURI

The largest sewer job that has been submitted to contractors in Kansas City for over a year was announced January 12. The contract will be let in the near future.

Lincoln Messick, manager of the Missouri Pottery Company of Kansas City, is visiting Monmouth, Ill., on the invitation of certain manufacturers to familiarize himself with the plants at that point.

Charles Roll, proprietor of the Roll Brick Company, Kansas City, has retired from the active management of



"CAN'T BE BEAT"

Why did a clay manufacturer tell us that about his MARION Revolving Shovel? *Because* it was giving him satisfaction, *because* it was making him a greater profit and *because* it was saving him from worry and inconvenience with labor conditions. There's a MARION to help *you*, too, Mr. Clay Manufacturer—no matter what your capacity may be. There's a MARION that will give you *Constant Service*—better, quicker and more profitable results. Write for Catalog 92—it tells a story of interest to the Brick Man.

THE MARION STEAM SHOVEL CO.
[ESTABLISHED 1884]
Station A. MARION, OHIO

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

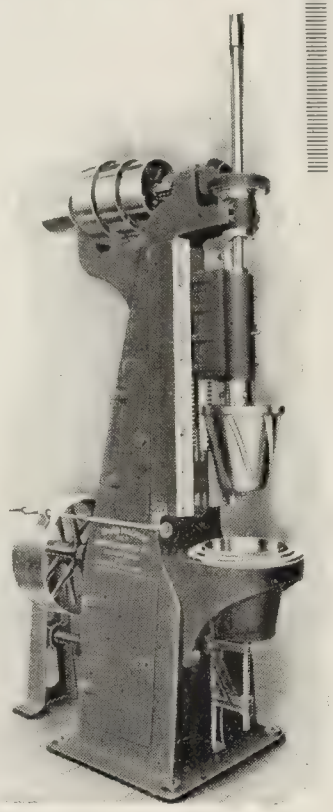
Baird

Pot Molding Machinery

We specialize in Machines for the Manufacture of Pottery and Guarantee Every One We Sell.

Write us for information.

Baird Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.



LEHIGH PORTLAND CEMENT COMPANY
LEHIGH PORTLAND CEMENT
CAPACITY OVER 2,000,000 BBLS YEARLY
ALLENTOWN, PA. AND CHICAGO, ILL.

Why Most Brick Streets Use Lehigh Portland Cement

Because it is not only **high** in **strength** but **dependably uniform.**
A perfect vitrified paving block of **your brick** and a perfect cement filler of **Lehigh** Portland Cement make a permanent street for the city and a permanent highway for the country.
These are only a few reasons why more brick streets use **Lehigh** Portland Cement than all others combined.

You Cannot Afford to Take Any Risk

Lehigh Portland Cement is the perfect cement. Specify it always. It protects you. Set the proportions for the mixture. Adhere to them. Then your job will be uniform throughout.

Lehigh Portland Cement Company
Allentown, Pa. and Chicago

the business. The reason for his retirement is his advancing age.

A recent fire in the Frisco yards of the Hydraulic-Press Brick Company, St. Louis, Mo., resulted in about $3,700 damage, the greater part of which was suffered by the machinery in the plant.

Thomas Eadie of the Eadie Building Supply Company expects to leave Kansas City shortly for Florida where he will spend a month on the sea shore. He says that when he returns to Kansas City he expects to sell more brick than ever before.

MONTANA

The old brick plant of J. N. Brown at Bozeman, Montana, has been taken over by P. O. Ducos, formerly of Little Falls, Minn., who will install additional machinery.

The Great Falls Sewer Pipe and Fireproofing Company, Great Falls, Mont., has been organized with a view of erecting a plant at that point, which it is expected will be the largest clay plant in the Northwest. Warren Overpeck, an eastern tile manufacturer, has been spending considerable time in Great Falls making arrangements for the establishment of the plant. Plans now under way provide that the buildings, which are to be four stores in height, will be erected during the winter and early spring.

NEW MEXICO

Over seven thousand square feet of dry floor space is being added to the plant of the New Mexico Fire Brick Company of Gallup, N. M., and other improvements will be made. The owners have arranged for a new manager to take charge of the operation of the plant early in the year.

NEW YORK.

The Jova Brick Company, Roseton, N. Y., in anticipation of a busy season during the coming year, is making some improvements on its north shed so that operations can be carried on in that part of the plant along more extended lines than heretofore. This company made no brick during the past year—1914—but the prospects for a good business during the coming season has led this company to make arrangements to operate its plant to capacity.

NORTH DAKOTA

The Red River Valley Brick Company, Grand Forks, N. D., held its annual meeting a few weeks ago, at which a number of stockholders and directors from other cities were present. The election of the board of directors and officers for the ensuing year took place following reports on last year's business read by the officers.

OHIO

The Krouse Clay Products Company, Akron, Ohio, is erecting a new plant at that point.

Wm. Meyers of Toronto, Ohio, is contemplating the erection of a brick plant at Stratton, Ohio.

Application has been made for a charter for a paving brick concern to be located at Athens, Ohio. J. E. Fox is the principal promoter of this enterprise.

The Wooster Shale Brick Company, Wooster, Ohio, is planning to increase its capital stock from $150,000 to $250,000. W. R. Barnhard, president, states that the plant will double its capacity.

The Face Brick Dealers' Association of America has been incorporated in Ohio with the necessary papers

registered with the Secretary of State. W. A. Fay, vice-president of the association, is named as one of the incorporators.

The Hydraulic-Press Brick Company of Cleveland, Ohio, is making extensive improvements at its Ironspot plant, which will cost, when completed, in the neighborhood of $50,000. New machinery and kilns are being installed and it is expected that the work of making these changes will be completed early in the spring.

The Gem City Brick Company, of Dayton, Ohio, which handles a large line of face brick in that city, representing some of the leading manufacturers, has joined the Builders' Exchange of Dayton, J. C. Crigler and P. P. Dyle being its representatives in the body. The exchange is planning to occupy greatly enlarged quarters in the Arcade building, the plan being to rearrange about eighteen offices so as to render them convenient for the use of all of the members, with a central telephone switchboard which will give service to all at a low cost. This will serve to consolidate the exchange and to render the administration of the service which it now renders its members much easier than is now the case.

OREGON

The Commercial Club of Salem, Ore., is endeavoring to interest capital in a fire brick plant at Buena Vista. Clay from the deposit at that point has been tested by the Salem Tile and Mercantile Company and found to be of high quality.

The valuation of building permits issued in Portland, Ore., during the month of December was $1,599,070, this amount being larger than that of any other Pacific Coast city and the largest for Portland for any month for more than a year. The outlook for the brickmakers is considered very good.

The Fairmont Brick Company, Eugene, Ore, was successful in securing a contract to furnish more than four hundred thousand common brick for a new armory to be constructed at Eugene. In addition to this, a contract for about one hundred thousand face brick was let to the Pacific Brick Company at Willamina, Ore., for the same building. The Fairmont Brick Company also recently landed the contract for one hundred and forty thousand common brick for the new University building at that point, for which also the Pacific Brick Company supplied the face brick.

PENNSYLVANIA

The Queen's Run Fire Brick Company, of Avis, Pa., has recently increased the amount of its capital from $250,000 to $600,000.

The National Fireproofing Company, Pittsburgh, Pa., has declared the regular quarterly dividend of one per cent on the preferred stock, payable January 15 to stock of record January 8.

The F. J. Guard Clay Products Company, Wilkes Barre, Pa., has been incorporated with a capital of $30,000 by E. B. Worthington of Dorranceton, Pa.

The Face and Fire Brick Company of Eastvale, Pa., is improving its plant and installing new machinery. The plant will be closed down for two months while the repairs are being made.

Directors of the Harbison-Walker Refractories Company, Pittsburgh, Pa., have declared for quarter ended December 31, 1914, a dividend of one and one-half (1½) per cent on preferred stock, payable January 20, to stockholders of record January 9.

The CANTON is the Grate for the Plant that Counts the Cost

CONVENIENCE, ECONOMY and DURABILITY are the three important features which, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of the Canton Grate.

With its use every pound of coal is made to yield its full value, resulting in a saving of from 25 to 33⅓% on fuel, and a proportionate amount on labor. Absolute control of oxidation and reduction is also insured.

These are only a few of the many advantages to be gained through the use of the Canton Shaking and Dumping Grate—sufficient to convince you that you should investigate further.

Bulletin B contains additional information

The Canton Grate Co.
Canton, Ohio



Hauling Brick

is a serious problem with every Brickmaker. On-time deliveries mean increased sales. The ordinary wagon won't do. It must be durable and easy to handle in narrow streets and alleys. Such a vehicle is the

Martinsburg Brick Wagon

Loads in ten minutes. Unloads in one. Never chips a brick. Economical. Durable. Large capacity. Easy draft. Flexible. Learn how and why it will solve **your** delivery problem. No obligation.

The Auburn Wagon Company
Martinsburg, W. Va.

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press

Auger Brick Machines

Down Delivery Tile Mills

Oil Burning Equipment

Crude Oil Engines

Piano Wire Screens

Dry and Wet Pans

Soft Clay Brick Machines

Pug Mills

Wet and Dry Clay Disintegrators

Smooth and Conical Roll Crushers

Wood Moulds

Trucks and Barrows

Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.

20 W. Jackson Blvd. Chicago, Ill.

J. W. Bickford and S. M. Bickford have resigned their positions as treasurer and secretary respectively of the Bickford Firebrick Company, Curwensville, Pa. Their places have not been filled as yet. J. M. McKinley has been made manager of the plant.

S. B. Dobbs, the well known face-brick distributor of Philadelphia, Pa., has given his friends the suggestion that they "brush up" for the New Year. The suggestion takes the form of a handy, mahogany backed clothes brush that will come in useful in many ways and in many places.

The annual meeting of the stockholders of the Freeport Clay Products and Minerals Company was held at the office of the company at Freeport, Pa., Tuesday, January 12, 1915, for the election of a board of directors for the ensuing year, and for the transaction of such business as may come before the meeting.

The brickmakers of Pittsburgh and vicinity were greatly interested in a meeting of about fifty Pittsburgh traffic men, held in the Fulton Building recently, in which initial steps were taken toward the organization of the Traffic Efficiency Club of Pittsburgh. This organization will be under the supervision of the American Commercial Association of Chicago, of which John P. Curran is secretary. The purpose of the club will be to better qualify traffic men of the Pittsburgh district for the duties that confront them in their profession. Regular educational meetings probably will be held. The club also will have a social side. It is estimated that in the neighborhood of five hundred men are eligible for membership.

During the year of 1914 Philadelphia building operations fell off more than $3,000,000 as compared with 1913. There were 10,564 permits granted during the latter year for 18,813 operations entailing a cost of of $38,763,850. The cost of operations during 1912 was $37,173,635. During the current year just ended there were 9,730 permits granted, covering 15,686 operations, at a cost of $35,408,495. The number of two story dwellings erected during 1914 was greater than in 1913, almost $13,000,000 being expended for this type of operation. Three story dwellings erected during the year cost approximately $2,412,345. One of the principal causes of the decreased total for the year was the small number of factory buildings erected, there being only 64 of these at a cost of $2,078,475. Factories built during 1913 cost $3,348,800.

The recent fire at the plant of the Ochs and Frey Brick Company, Allentown, Pa., has hastened the plans of this company to increase its capacity. They have drawn up an agreement with the Dech, Huber and Kichline Estates whereby a fifteen years' supply of clay of the best quality comes to them. The clay runs from six to twelve feet in depth which will be sufficient to manufacture approximately 150,000,000 to 200,000,000 brick. Two additional modern kilns large enough to take care of the increased capacity will be erected together with the rebuilding of the destroyed ones. They will also install a new engine of increased horsepower together with entirely new machinery. A mile or more of track will be laid from the crusher to the clay pit upon which the clay will be hauled in by an electric engine and cars, doing away with the horse and cart.

The brick business in Pittsburgh and vicinity, like other building material lines, has suffered to a certain extent since the outbreak of the European war. Previous to this, building in Pittsburgh was exceptionally good, thousands of new homes and other buildings that require brick hav-

ing been built in the last few years. Great difficulty is being experienced in finding homes for rent, owing to the new houses being purchased almost as fast as they were built. The manufacturers have done a good business, as the use of brick in the construction of homes has grown enormously in the last few years. With a greater number of large buildings either under way, nearing completion, or already finished, and with many others of a similar nature planned, Pittsburgh experienced a year of much activity in the building field last year. In the last decade or so, the whole downtown section of the city has undergone a complete transformation as to skyline, large structures having been erected in that period, and last year added its full quota to the list.

One of the most notable of the new buildings now under construction in Pittsburgh is the new William Penn Hotel, at Sixth and Oliver Avenues, and Cherry Way, which represents an outlay, in round figures of $5,000,000. The new $1,600,000 building of the Rosenbaum Company at Liberty and Penn Avenues and Federal Street, soon will be ready for occupancy. The Masonic Temple in the Schenley Farms district is also nearing completion, it having cost more than a million and a half of dollars. It would be futile to attempt the enumeration of all the improvements now under way or contemplated in Pittsburgh, as they total up in the tens of millions of dollars.

TENNESSEE.

Lee Lovin, manager of the Tennessee Brick and Tile Company, Dyersburg, Tenn., died on December 29. He was stricken on his way to the plant and was taken home where he died shortly afterward.

TEXAS.

The Chamber of Commerce of San Antonio, Tex., is negotiating with an Idaho concern for the purpose of securing a brick and tile plant for that locality. The prospect has already had representatives on the ground looking for a suitable factory site, and it is thought that this industry will soon locate at that point.

UTAH.

The Provo Pressed Brick Company, Provo, Utah, has begun the manufacture of a red brick made from a new deposit of clay recently opened by the company east of Provo.

VERMONT.

A conference of the salesmen of the Rutland Fire Clay Company, Rutland, Vt., was held a few weeks ago. There were three sessions in which methods of taking advantage of good trade conditions and ways of developing new territories were discussed. The Rutland Company has eight traveling salesmen who cover territory as far west as Buffalo, N. Y., and as far south as Norfolk, Va. This concern did fifteen per cent more business during the months of November and December, 1914, than during the same period last year.

WASHINGTON.

The value of the building permits issued in Seattle, Wash., during December, 1914, amounted to more than a million and a quarter of dollars, or over twice as much as for the same month in the year preceding.

WEST VIRGINIA.

The Parkersburg Shale Brick Company, Parkersburg, W. Va., which is now making extensive improvements at its plant, will soon have completed its work in this direction and have the plant in operation. The company has

Burns Drain Tile In Twenty-Six Hours with Hook System

So the Atlanta Tile & Brick Co., Atlanta, O., advise us in their letter of January 7, 1915, this time including watersmoking and high fire periods. Like other users of the Hook System, they have found that it handles even a very tender clay successfully. Many additional interesting points are brought out in their letter printed below—read it.

"The Hook System installed at our plant has proven very satisfactory. We have burned a 22 foot kiln in as low as 26 hours. This time includes the watersmoking and high fire periods. We are burning coal as fuel at present, but have burned with wood alone and also in connection with coal with equally good results. Our average fuel consumption is about six tons coal per kiln.

We have a clay that is very tender and requires great care in drying in the dry shed. Quite often we cannot dry ware fast enough in the dry shed, and to prevent a delay in our work, place it in the kiln very wet. In fact we have taken ware from the dry shed and set in kiln when it was so wet that it would only stand six tiers high. After placing in kiln to this height, they would be allowed to stand for about a day, after which time they would be stiff enough to permit placing the rest of ware on top. Of course when the tile were in this condition we could not finish nearly so quickly, as it required longer to watersmoke, but it is remarkable how ware can be placed in kiln this wet and come out in such perfect condition. We have burned a full kiln of ware under the conditions mentioned above, and have had but a few, if any, damaged pieces.

We have sent you two tile, one from the bottom tier and one from the ninth tier. You can see that the ware burns uniform. We are very sure that it would be impossible to find another system that would burn our ware as successfully as is possible with the Hook System."

Yours truly,

ATLANTA TILE & BRICK CO.

Our masons are competent and the system can be installed in any type of kiln, round or rectangular, old or new.

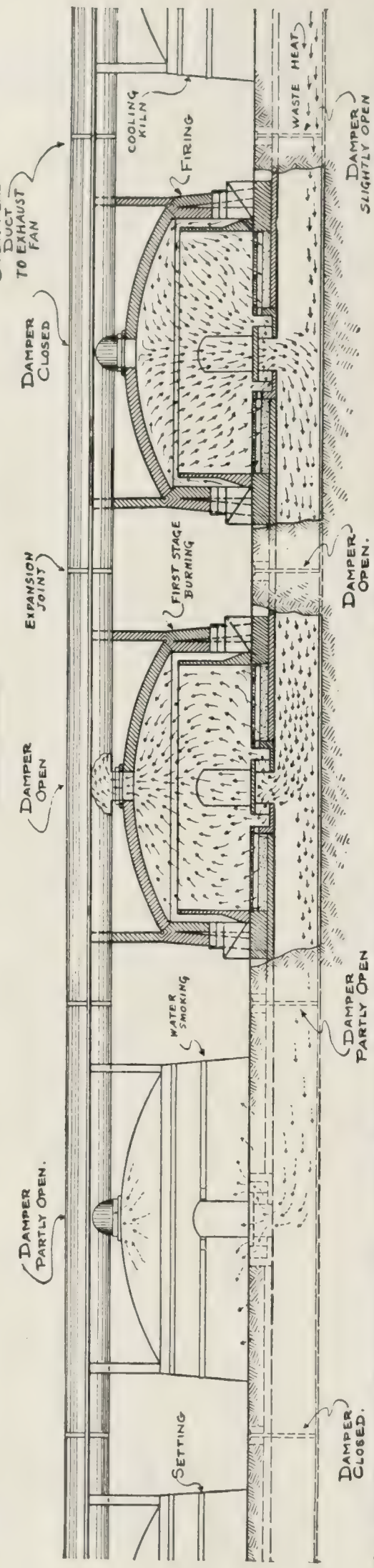
Hook Patent Kiln Co.

Main Office: Vigo, Ohio

Canadian Office:
250 Defferin Street, Toronto, Ont.

THE SCHAFFER SEMI-CONTINUOUS KILN SYSTEM

(Patents Pending)



The Schaffer Semi-Continuous Kiln System consists of an overhead duct and an underground tunnel arranged in such a manner as to make the operation of the round down draft kilns continuous.

It gives the same fuel saving as the regular continuous kiln, but is much more simple to operate.

It produces a much higher class ware than is produced in either the continuous or periodic kilns.

SEECO SYSTEMS applied to your round down draft kilns will save you $1,000 per year on each kiln by taking your heated gases to the next kiln ahead, instead of out to the stack.

This is only one point of advantage.

There are many others, if you will ask us to explain.

Seeco Systems Secure Success in Old Plants as well as new.

THE SCHAFFER ENGINEERING & EQUIPMENT CO. (Incorporated), TIFFIN, OHIO

installed a tramway which will enable it to increase its output considerably. New machinery is being installed at the plant which will enable the company to produce an improved building brick, and also paving brick.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

Coincident with the report that, while British pottery exports are showing a steady increase, these figures when compared to those for the corresponding period of 1912 and 1913 show a great falling off, comes the news that the H. R. Wylie China Company, Huntington, W. Va., has resumed full operations with prospects for an entire season of good business, due to the increased demand for pottery "Made in U. S. A."

In speaking of the situation, H. R. Wylie, of the local company, said:

"The business is here and it is up to the potters of America to go after it with the same vim as competitors have in the past.

"One glowing possibility comes from the South, where the industrial welfare of the section was staggered by an overflow of cotton, with no demand. Today queries are being received for large quantities of pottery ware. This to me and the local factory means that we will have all the work we can handle in the next few months.

"The company will make display of its wares in the Manufacturers' Building of the Panama-Pacific International Exposition, which will be held in San Francisco this year. Some samples of the company's goods will also be in the West Virginia State Building.

"The outlook for the pottery industry in all its branches is most favorable, as the European war has created an unparalleled condition. Manufacture in the warring countries is absolutely at a standstill, and importations in most instances are entirely eliminated. Government statistics show that for the year ending June 30, 1914, over $10,000,000 worth of imported chinaware came into the United States. This is at the low valuation. The retail price of these goods would possibly be $25,000,000. While, of course, importations will not be entirely shut off yet, it is safe to figure that they will be reduced at least fifty per cent from last year, and even if the war should end in the near future, there is bound to be a shortage of wares for a long time to come. Therefore, there should be a large demand for "Made in U. S. A." goods.

"American industry has been crippled somewhat in the past by American prejudice, believing that some goods were better if they come from Europe. This prejudice has, in a manner, worked to the advantage of the foreign countries. Of course, the foreign countries will always have certain lines which are unusual and something that we want, but there is no reason why American people should prefer an imported label to a superior home product, and the war is going to furnish a very liberal education to Americans in the superiority of home-made goods.

"This refers to all lines of goods that have been here-

tofore largely imported from abroad. The policy we should adopt is to give American goods a fair trial, as American manufacturers are asking no favors, but are willing to stand on their own merits. All they ask is consideration, and we believe that the purchasing public of the country in the future, no matter what they buy, will make sure that the articles they are purchasing are made in the United States, and by co-operation in this direction, our country will achieve and experience within the next few years, the greatest era of prosperity in its history."

It is interesting to note the prices which are being paid for high-grade artistic pottery made by the Rookwood Pottery Company, of Cincinnati, Ohio. That company has made arrangements with exclusive jewelry houses, one in each large city in the country, to handle its line. In Louisville William Kendrick's Sons, leading Fourth avenue jewelers, have the exclusive agency. During the past year sales of this grade of pottery have been excellent and the Christmas holiday business was immense. Better prices have ranged than during the preceding year and many pieces were sold as high as $50, $60 and $70. A line of plaques which the company has just put on the market is bringing from $25 to $60. This work is done by hand and no duplicates of a design are marketed. Plain pieces sell at prices ranging from $1 to $5.

William K. Buxton, who for the past ten years has been manager of the decorating department of the Crooksville China Company, Crooksville, Ohio, has resigned and left for Mt. Clemens, Mich., where he will assume the management of the decorating department of the Mt. Clemens Pottery Company. The place left vacant by Mr. Buxton's resignation will be filled by the promotion of Paul Boring. Mr. Boring has held the position of assistant manager of the decorating department for the past five or six years and is in every way qualified to assume the management of the department.

After being idle for about three weeks during the holidays, all departments of the Taylor, Smith and Taylor pottery, Chester, Ohio, have resumed full operations. The Edwin M. Knowles plant has also reopened. During the holiday shut-down, several repairs and improvements have been made at both these plants.

Mat Sutherin who has been the engineer of the Oliver China Company, Sebring, Ohio, since it was built fourteen years ago, has resigned his position and gone to Carrollton to accept a like position at the new Albright pottery. Mr. Sutherin was a pioneer of Sebring and a faithful man in his place. Before coming to Sebring he had been a railroad engineer for some time.

The Uhl Pottery Company, Huntingburg, Ind., reports a big business for 1914. This company manufactures stoneware, sewer pipe, fire brick and flower pots and has a large deposit of fire clay at the plant. One million jugs were manufactured at this plant during the past year.

E. H. Hughes, representing S. A. Weller, of the Zanesville Pottery Company, Zanesville, Ohio, was recently in Louisville calling on the retail and wholesale dealers in pottery and vases.

The Summit China Company, Akron, Ohio, has increased its capital stock from $100,000 to $150,000.

Now Is the Time

to tack up "Build with Brick" signs to bring your message before the man who will build this spring.

Order your signs now to avoid further delay!

Reasons Why You Should Use Gandy Stitched Cotton Duck Belting



YOUR choice of a belt depends on two considerations — service, first; and price, second. You are bound to buy where you are sure of getting the greatest amount of Service for the least outlay of money.

On these two considerations, "The Gandy Belt" offers you the following:

Proof of service under the severest conditions of use (dust, dirt, moisture, exposure to acid fumes, etc.). This proof in the form of letters received from satisfied users. Thousands of Gandy belts are now operating satisfactorily in all lines of industry. Names of users furnished on application.

Price: The initial cost of "The Gandy Belt" is only about one-third that of leather belting and much less than that of rubber belting, while it does the work equally as well.

Whenever you are interested we will send you samples and full information.

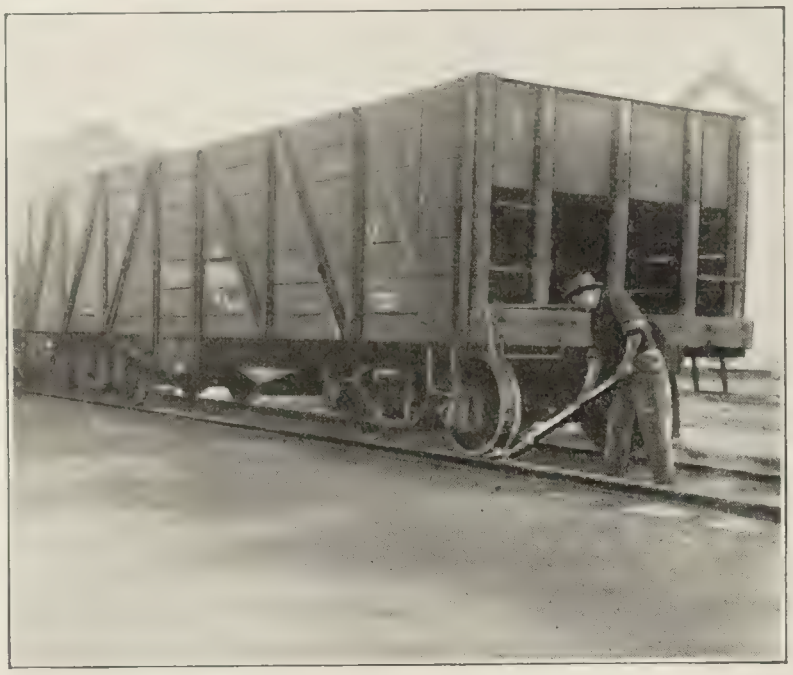
The Gandy Belting Company

732 W. Pratt Street
Baltimore, Md.

New York Office, 36 Warren Street

Job Wanted

No Pay Unless I Make Good



I'll Move Any Loaded Car That's on the Track

Besides coming on trial (pay for me in 30 days if you like my work or return me freight collect), I am fully Guaranteed. Say you're willing to be shown by sending a trial order now.

$4.00 Hires Me For Life

Yours for Results

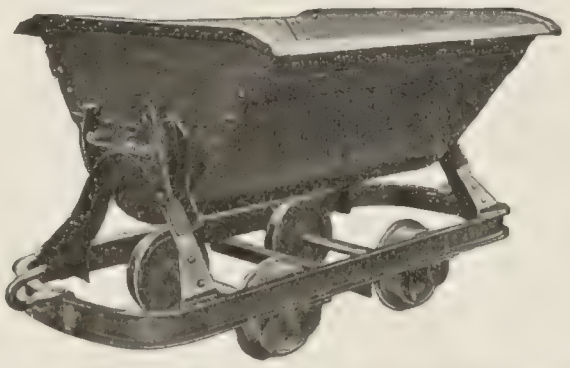
IDEAL CAR MOVER

P. S. Send for me today—no obligation.

We specialize in clay plant equipment, including Elevators, Screens, Track, Switches, Turntables, and

We Especially Commend

This Two-Way Dump Car



Write TODAY for our catalogue

H. B. Sackett Screen & Chute Co.

1681 Elston Avenue

Chicago

Branch Office and Warehouse
Charlestown, Mass.

Freight Tariffs and Troubles

(Continued from page 173.)

specified herein, *even though by so doing some rates are increased slightly more than five per cent.*"

Clayworkers will serve their interests by reading, once more the article by Mr. Preetorius, on pages 31 and 32 of the January 5 issue.

To Investigate Discriminating Freight Rates.

At the annual winter meeting of the New Jersey Clayworkers' Association held at Rutgers College, New Brunswick, N. J., on December 28 and 29, the traffic committee requested the members of the association to submit to them data tending to show the inequalities in freight rates between imported and domestic materials and facts regarding anything else about freight rates that appears unjust to the shippers.

A committee was appointed to go into this matter. The members are: D. R. Edgar, of Edgar Brothers, Metuchen; Abel Hansen, of the Perth Amboy Pottery Company, Perth Amboy; Howard Valentine, of the R. H. & H. Valentine Company, Woodbridge; Hubert Somers, of the Somers Brick Company, Atlantic City; and J. T. Hibbs, of the J. W. Paxson Company, Philadelphia, Pa.

Changes in Freight Rates.

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points.

From Bradford, Kushequa and Lewis Run, Pa., common building brick to New York, N. Y., stations, Melrose Junction and Yonkers, N. Y., $2.30 per net ton.

From Brandon, New Haven Junction and North Clarendon, Vt., clay to Minetto, N. Y., $2.50 per net ton.

From Chester and Marcus Hook, Pa., brick to Harrisburg, Lebanon and Steelton, Pa., $1.70 per net ton.

From Corry, Pa., brick to Alliance, Ohio, $1.75; to Beaver and Beaver Falls, Pa., $1.30; to Chicago, Ill., $2.50; to Cleveland, Ohio, $1.35; to Conneautville, Pa., $1.00; to St. Louis, Mo., $3.10; to Sandusky, Ohio, $1.45; to Sharon, Pa., $1.20 per net ton.

From Irvona, Karthus, Krebs, Lock Haven, Beech Creek, Bigler, Clearfield and Clymer, Pa., and other Pennsylvania points, brick and other clay products to Culpepper, Va., $3.40; to Lynchburg, Va., $3.60 per net ton.

From Mount Holly Springs and Toland, Pa., clay to Perth Amboy, N. J., $1.70 per net ton.

Changes in Freight Rates.

From Evansville, Ind., brick, common, building and paving, to Aurora and Elgin, Ill., $1.75 per net ton.

From Highlands, Ind., pressed brick to Chicago, Ill., 50c; to Indiana Harbor, Hammond and Osborn, Ind., 30c; to West Gary, Ind., 40c per net ton.

From Kankakee, Ill., pressed brick to Streator, Ill., 50c per net ton.

From Manistique, Mich., clay to Cloquet, Minn., 10c; Grand Rapids, Minn., 15c; to International Falls, Minn., 14c per cwt.

From Momence, Ill., pressed brick to Kankakee, Ill., 35c per net ton.

From West Salem, Ill., brick, common, building and paving, to Cincinnati, Ohio, $1.55; to Louisville, Ky., $1.26; to New Albany, Ind., $1.26 per net ton.

From Southern Points.

From Jacksonville, Fla., paving brick (when from points in United States outside of Florida) to Manatee and Palmetto, Fla., 6½c per cwt.

From Owensboro, Ky., brick and articles taking the same rate, to Chicago, Ill., $2.15 per net ton; to Milwaukee, Wis., and rate points, $2.55 per net ton.

From Roanoke and Salem, Va., building brick, to Danville, Va., 96c per net ton.

From Union City, Ga., pressed and fire brick, to Birmingham, Ala., and group, 6½c per cwt.

Machinery and Equipment

(Continued from page 175)

field for our advertisers who are, we are sure, awake to the possibilities of this department.

Efficient Dryer Cars and Pallets.

A dryer car, to be 100 per cent efficient, must be made so that it will not warp or twist when subjected to heat. This is one of the strong considerations of the dryer car made by the Pettigrew Foundry Company of Harvey, Ill. The cars made by this company are of cast iron, with the exception of the axles, braces and pallet supports, and these are of steel. The wheels are pressed on the axles, which run on roller bearings, and the combination makes a strong car, easily moved. Cast iron is used for the frame, as this insures against twisting and warping in the dryer, and the cars are made with single decks for mechanical setting or with double decks for hand setting. The cars are made in any length and for any gauge track.

In order to overcome the objectionable features of the old style pallets, a cast iron pallet has been designed that will not warp or twist or burn, yet it is no heavier than steel and not much heavier than wood. It presents a smooth surface with sharp edges, and is easily handled. Finally, the broken cast iron pallet has an intrinsic value, as scrap.

The Pettigrew Foundry Company has supplied its cars and pallets to the Chicago market for years. They have been in use constantly, and have earned an enviable reputation. They are no experiment.

In order that brickmakers who have no chance of seeing these cars and pallets in operation, may have an opportunity of testing them, the Pettigrew Company makes an offer that is interesting. It will make a sample deck to fit your old car, free of expense to you, simply to demonstrate its faith in your good sense and ability to see merit in material and workmanship where merit actually exists.

Cutting Down the Wheelers.

Manufacturers of soft-mud brick know the troubles that beset them in keeping the runways in repair, and so les-

An Appropriate Resolution

For 1915 would be to Install

The Underwood Producer Gas Burning System

Patented

This resolution carried into execution means a more profitable year than any that has gone before.

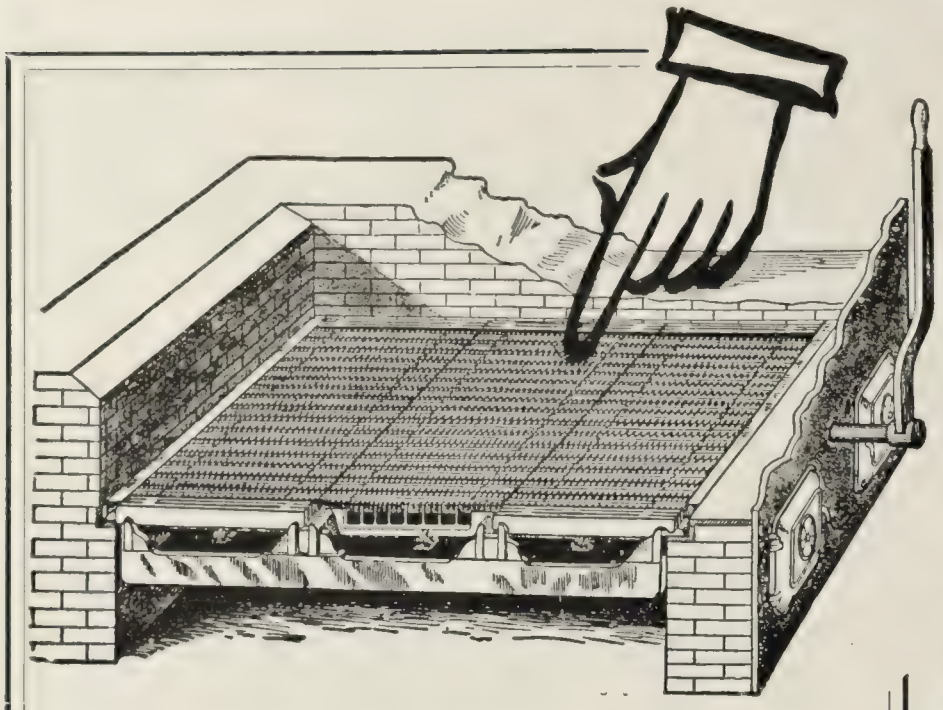
Why?

Because by this system alone do you get genuine burning economy.

The Manufacturers Equipment Company

Everything for the Clay Worker

Dayton, Ohio, U. S. A.



DIVIDENDS!

Could you pay a dividend at the end of this fiscal year, if you could cut your coal purchase cost twenty-five percent?

Answer it!

Have you figured it?

Do it!

In This Space 4

Put down in pencil the cost of boiler fuel last year, divide by four (4). The arrow points to the saving in dollars and cents.

It is and can be accomplished by using Martin Grates

Write to

THE MARTIN GRATE CO.

347 S. DEARBORN ST.

CHICAGO ILLINOIS

To find out How?

sening wheeling difficulties, and the amount of damaged brick caused by upsetting barrows and other accidents.

In wet and stormy weather these troubles are multiplied, while in the summer there is always a question of having enough men.

The Anderson Brick Conveyor System, made by the Marinette Iron Works, of Marinette, Wis., not only solves these troubles, but reduces the cost of transferring the brick from the machine to the racks (in the case of an open yard) and from the racks to the kiln, so that its installation will make a dividend paying plant out of one that is now running about even.

It reduces the number of wheelers from three to five men and saves from $6 to $10 a day. Multiply this by the number of working days in a year and you have a very attractive profit, considering the investment is so small.



The illustration above shows that the conveyor will make a right angled turn without any difficulty, and by it the brick may be fed into any section of the drying system.

Trade Press Service Bureau Organized.

Publishers of technical and trade papers have long felt that, while they had an undoubted claim on the attention of manufacturers of factory, store and office equipment, the inconvenience of dealing with so many comparatively small journals has militated against the latter's receiving consideration at the hands of large national advertisers. It was suggested that, if these trade and technical papers would arrange to act as a unit, conducting negotiations through one office, they would be able to overcome the difficulty outlined.

To this end, a number of the eastern and western publishers have formed an association which is known as the Trade Press Service Bureau. This bureau will solicit the advertising patronage of national advertisers, and will also render specialized co-operative service to such advertisers. It will, in this way, open a new advertising field to many lines, and, at the same time, bring a new advertising clientele to the trade and technical journals.

The officers of the association are: President, M. O. Blackmore, "The Inland Printer"; Vice-President, R. C. Jacobsen, "Hide and Leather"; Secretary-Treasurer, Geo. F. Dean, "The National Builder"; Directors, Allen W. Clark, "American Paint & Oil Dealer"; W. J. McDonough, "The Dry Goods Reporter"; H. H. Rosenberg, "Brick and Clay Record"; J. Newton Nind, "Grand Rapids Furniture Record." R. R. Shuman, of Chicago, widely known as a trade journal specialist, has been appointed Commissioner.

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Richardson-Lovejoy Eng. Co.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Fairbanks, Morse & Co.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Dodge Mfg. Co.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Blocks.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Blowers.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mc. Mfg. Co., H.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.

Buckets.
Dodge Mfg. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Gerlock, H. W.
Martin Brick Machine Mfg. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.

Clay Handling Machinery.
Clearfield Machine Shops.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Weller Mfg. Co.

Clay Technologist.
Richardson-Lovejoy Eng. Co.

Clutches (Friction).
Chambers Bros. Co.
Dodge Mfg. Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Mathews Gravity Carrier Co.
Stephens-Adamson Co.
Weller Mfg. Co.

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Machy. Mfg. Co.
Sackett Screen & Chute Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Richardson-Lovejoy Eng. Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Dynamos and Generators.
Fairbanks, Morse & Co.
Westinghouse Elec. & Mfg. Co.

Electric Shovels.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Electrical Machinery.
Fairbanks, Morse & Co.

Elevator Buckets.
Dodge Mfg. Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Raymond Co., C. W.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Dodge Mfg. Co.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Eq. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
Arbuckle & Co.
Fairbanks, Morse & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Eq. Co.

Fans.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.
Stewart Heater Co.
Sturtevant Co., B. F.

Filter Presses.
Baird Machine & Mfg. Co.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Fuel Economizers.
Sturtevant Co., B. F.

Furnace (Kiln).
Richardson-Lovejoy Eng. Co.

Gas Engines.
Fairbanks, Morse & Co.

Gas Producers.
Fairbanks, Morse & Co.

Gears.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.
Manufacturers Equipment Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Dodge Mfg. Co.
Fairbanks, Morse & Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Inspection Tests—Consultation.
Richardson-Lovejoy Eng. Co.

Interlocking Block.
Smith, W. W.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Eq. Co., The
Tecktonius Mfg. Co., E. C.

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Eagle Tank Co.
Gerlock, H. W.
Tecktonius Mfg. Co., E. C.

Lime Mixer.
Gerlock, H. W.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



My Announcement
To the Clayworkers of the Nation

My experience in the clay product field as the former editor of the best publication ever printed for an industry—the knowledge I have gained through this contact with your selling problems—your requirements in matters of publicity—all this coupled with the fact that I have drawn around me an organization of experts in their several lines, gives me an exceptional advantage in the handling of your advertising, whether your spend $10 or $10,000.

I ask you, therefore, to give full consideration of the unusual offer I have made you below.

Yours for a Greater Era for Burned Clay,

Iverson C. Wells.

We'll Submit Free a Complete Plan For Selling Your Products

We've worked out a cashable advertising plan—a practical selling campaign—one that will enable you to create a demand for your burned clay products in your own territory—one that will turn your clay pit into dollars.

There is no magic about it—just plain every day selling methods, a system that has been proven successful, and it is economical and sure fire.

This Plan Will Enable You to Outfight Concrete and Lumber

It will place you on a footing with your natural foes—it will give you the bulge on your strongest competitors.

It will put you in the running. No longer will you be forced to sit idly by and watch the other fellow take all the good things in life.

Here Is What Is Included In The Selling Plan We Offer You

1—A full set of newspaper ads especially planned, designed and illustrated for you.
2—A full set of newspaper features articles built around your product and which you will give to your newspaper to print free.
3—A full set of street car cards (if you have city or interurban service in your locality).
3—A special booklet written around your product with appropriate illustrations which you are to send to prospective customers and to all inquiries.
5—A special mailing folder to use as a follow-up.
6—A series of form letters to be used in a follow-up campaign.
7—A list of printed literature which is carried in stock and which is educational in nature and which will greatly assist you in creating a demand for your products.

Wells-Royse, 1305 Monadnock Block, Chicago.
We wish to take advantage of your free offer to submit us a plan to sell our products. We understand that this offer of yours does not obligate us in any manner.

We manufacture.....
.....
(Describe your products above)
We have a daily capacity of.....
.....
(Give figures on each item)
We are willing to appropriate $.....
for a full year's advertising, this amount to cover everything —printing, advertising, etc.
(Signed).....
By.....
City.....
State.....

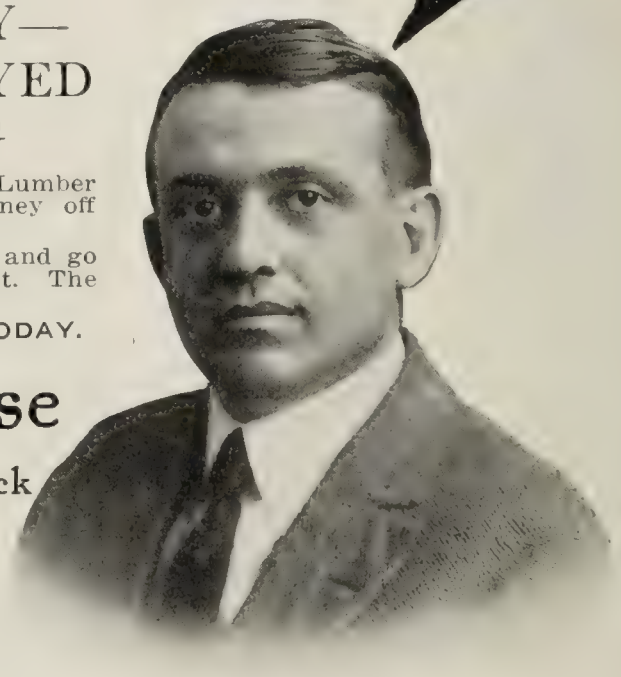
ACT TODAY— YOU'VE DELAYED TOO LONG

The Concrete Man and the Lumber Man has been making money off your procrastination.

Stop it! Get on your toes and go after what is yours by right. The way is easy.

MAIL THE COUPON TODAY.

Wells-Royse
1305 Monadnock Block
Chicago



THE BUYERS' DIRECTORY—Continued

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Lug (Band)
Tecktonius Mfg. Co., E. C.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Faribanks, Morse & Co.

Oil Burners.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poldometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.

Power Plant Equipment (Complete).
Dodge Mfg. Co.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.
Schultz & Son, A. L.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Pumps—Steam.
Fairbanks, Morse & Co.
Pulsometer Steam Pump Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.

Quartz Glass Articles.
Englehard, Chas.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Foster Co., L. B.
Frank, M. K.
Lakewood Eng. Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Davenport Loco. Works.
Fairbanks, Morse & Co.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Eng. Co.
Manufacturers Equipment Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Martin Brick Mach. Mfg. Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope Preservative.
Dodge Mfg. Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Shale Planer.
Arbuckle & Co.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.

Steam Shovels.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Tanks.
Eagle Tank Co.

Silo Iron Appliances.
Eagle Tank Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Tecktonius Mfg. Co., E. C.
Weller Mfg. Co.

Tanks.
Eagle Tank Co.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Pettigrew Foundry Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Fairbanks, Morse & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co., The.

Unloading Devices for Pans.
Clearfield Machine Shops.

Wagons.
Auburn Wagon Co.
Manufacturers Equipment Co.

Water Softeners.
Dodge Mfg. Co.

Water Tanks.
Eagle Tank Co.

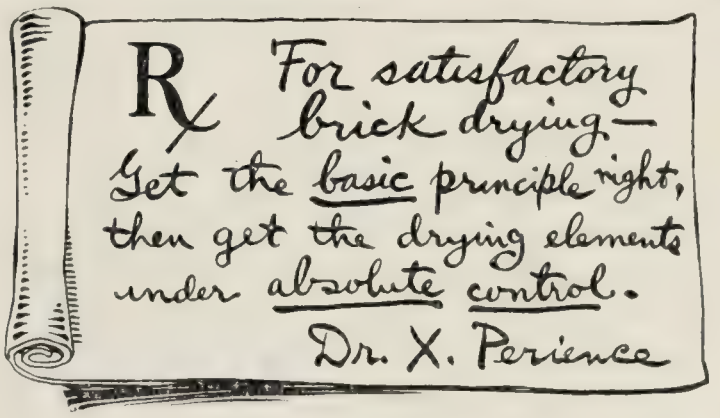
Wet Pans.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels.
Lehigh Car, Wheel & Axle Works.

Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.



Or in other words: For satisfactory drying of any variety of clay, install The Standard Natural Draft Drier.



Write for our interesting catalog containing list of many Standard Drier users. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

WEBB WIRE WEARS WELL

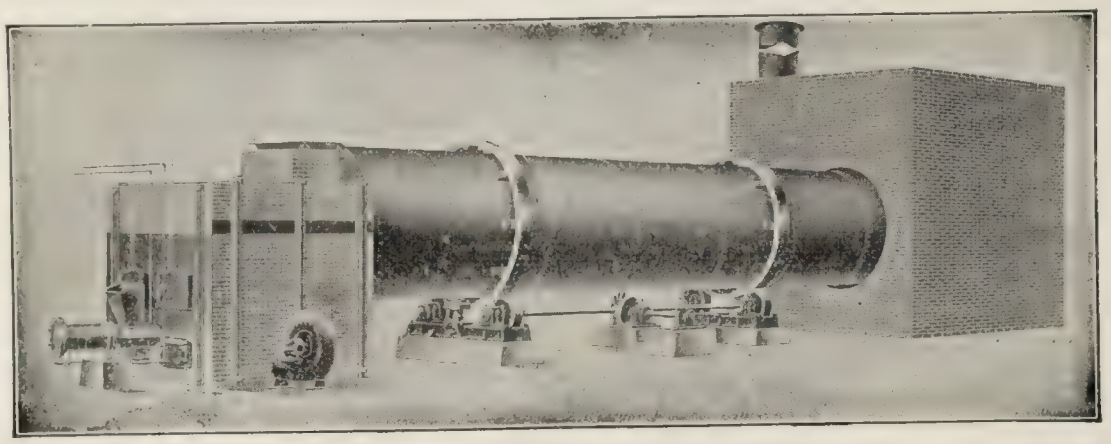
WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

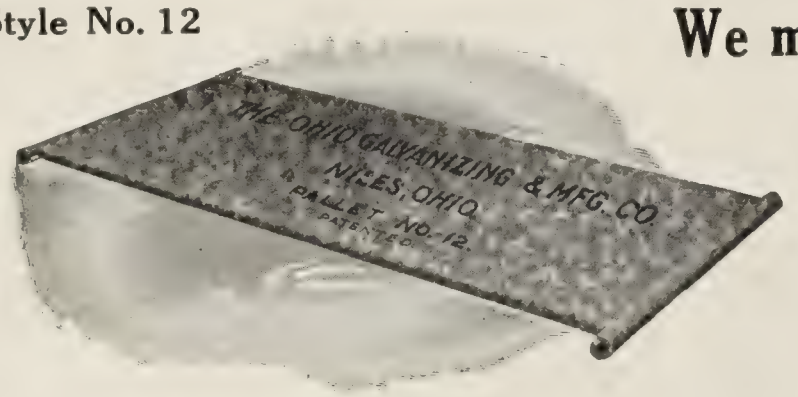
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations $5.00 Post Free

THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

"BRICK AND CLAY RECORD"

445 Plymouth Court, Chicago

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head.	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin.	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Keim Brick & Tile Co.	Louisville	Ohio
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works.	Reading	Pa.
Elk Fire Brick Co.	St. Marys	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin.	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head.	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Keller Brick Co., The, Cuyahoga Falls, O..... 13

BRICK (COMMON)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton Ill..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Metropolitan Paving Brick Co., Canton, O..... 10
Sunset Brick & Tile Co., Gonzales, Tex..... 15

BRICK (FACE)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
American Enamel Brick & Tile Co., New York, N.Y..... 13
Bradford Pressed Brick. Co., Bradford, Pa..... 13
Farr Brick Co., Cleveland, O..... 13
Gethmann Brick Co., Gladbrook, Ia..... 13
Hocking Valley Pro. Co., Columbus, O..... 15
Hydraulic Press Brick Co., St. Louis, Mo..... 13
Keim Brick & Tile Co., Louisville, O..... 15
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Kimbell Brick Co., S. S., Chicago,Ill..... 13
Sunset Brick & Tile Co., Gonzales, Tex..... 15

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill..... 6
Brighton Fire Brick Co., New Brighton, Pa..... 6
Chicago Retort & Fire Brick Co., Chicago, Ill..... 4
Davis Fire Brick Co., Oak Hill, O..... 4
Dover Fire Brick Co., Cleveland, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6
Maurer & Son, H., New York City..... 4
Mexico Brick & Fire Clay Co., Mexico Mo..... 6
Queens Run Fire Brick Co., Lock Haven, Pa..... 4
Jos. Soisson Fire Brick Co., Bolivar, Pa..... 4
Sunset Bk. & Tile Co., Gonzales, Tex..... 15

BRICK OR BLOCK (PAVING)
Albion Shale Bk. Co., Albion, Ill..... 8
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Barr Clay Co., Streator, Ill..... 6
Bessemer Limestone Co., Youngstown, O..... 8
Big Four Clay Co., Canton, O..... 8
Carlyle Paving Brick Co., Portsmouth, O..... 10
Danville Brick Co., Danville, Ill..... 10
Deckman-Duty Brick Co., Cleveland, O..... 8
Dunn Wire Cut-Lug Bk. Co., Conneaut, O..... 7
Hamburg Vit. Brick Co., Philadelphia, Pa..... 10
Harris Brick Co., Cincinnati, O..... 8
Hocking Valley Brick Co., Columbus O..... 10
Mayer Brick Co., C. P., Bridgeport, Pa..... 10
Metropolitan Paving Brick Co., Canton, O..... 10
Murphysboro Paving Brick Co., Murphsboro, Ill..... 11
Nelsonville Brick Co., Nelsonville, O..... 8
Purington Paving Brick Co., Galesburg, Ill..... 10
Shawmut Paving Brick Co., Shawmut Pa..... 10
Sterling Brick Co., Olean, N. Y..... 6
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 11
United Brick Co., Conneaut, O..... 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa..... 6
Sunset Bk. & Tile Co., Gonzales, Tex..... 15

DEALERS
American Clay & Cement Corp., Rochester, N. Y..... 13
Bonner & Marshall Brick Co., Chicago, Ill..... 15
Kimbell Brick Co., S. S., Chicago, Ill..... 13

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O..... 10

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill..... 13

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa..... 6
Davis Fire Brick Co., Oak Hill, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15

TILE (ROOFING)
National Roofing Tile Co., Lima, O..... 15

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. **Cleveland, Ohio**

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

***For* Side Walls**
***For* Crowns**
***For* Fire Arches**
***For* Perforated Bottoms**

Consult us when in market.
We are ready to serve you

DAVIS FIRE BRICK CO.

OAK HILL, OHIO

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co., Ltd.
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press. Bk. Co., Indianapolis.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Shale-Tex—Streator (Ill.) Brick Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

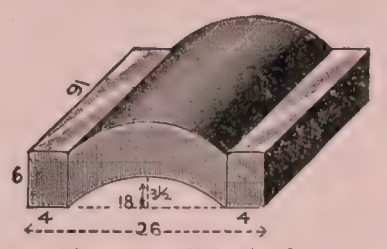
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Elk Fire Brick Company

High Grade Fire Brick and Clay

ST. MARYS

PENNSYLVANIA, U. S. A.

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

The Permanent Way



Permanent if Properly Cared For.
Durable Under any Conditions.
Brick in Pavements is the Most Durable of all Manufactured Materials.
Wire-Cut-Lug Brick is the Most Durable Type of Paving Brick.
Manufactured by 23 Competing Companies operating 36 Plants.

Write to

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

(*Licensors*)

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Also High-Grade Building and Face Brick

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

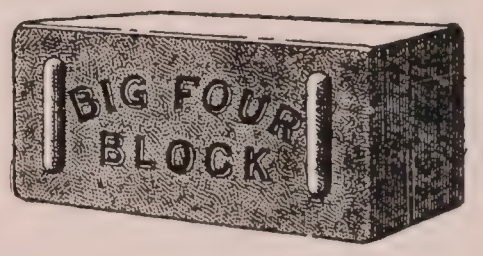
Albion Shale Blocks Stand Test

In Chicago, Milwaukee, St. Louis, Louisville, Indianapolis, Evansville, Terre Haute, and all intermediate cities

Plant Most Modern in Construction and Equipment

ALBION SHALE BRICK COMPANY
ALBION, ILL.

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO
CLEVELAND OHIO.



THE HOME OF "MEDAL BLOCK" AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Meets All Tests

Plants Logan, O. *General Office* Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS.

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick

Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick

Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick

Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost—see Prices Quoted in this Advertisement.

Build with Brick

Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

Official Directory of
Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

American Ceramic Society—C. W. Parmelee, B. S., Pres., New Brunswick, N. J.; Edward Orton, Jr., E. M., Sec'y, Columbus, Ohio.

American Face Brick Association—J. W. Moulding, Pres., Chicago, Ill.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Builders' Bureau—N. Ellery, Sec'y, Merchants' Exchange Bldg., San Francisco, Cal.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—C. A. Millar, Pres., Toronto, Can.; Jn . R. Walsh, Toronto, Can.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; J. W. Rollinson, Sec., Pittsburgh, Pa.

Illinois Clay Manufacturers' Association—D. C. Haeger, Pres., Aurora, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—Eben Rodgers, Pres., Alton, Ill.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—M. C. Madsen, Pres., Hutchinson, Minn.; T. B. Martin, Sec'y and Treas., Minneapolis, Minn.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—W. S. George, Pres., East Liverpool, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, Ohio.

Western Ontario Clayworkers' Association—Alfred Wehlan, Sec'y, Cario, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—John S. Ringle, Pres., Wausau, Wis.; Prof. Samuel Weidman, Sec'y, Madison, Wis.

L. D. BINYON
President

H. L. MATZ
Vice-President

JAS. A. HOGAN
Sec'y and Treas.

S S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Homestead Face Brick

A true Colonial product which pleases the most fastidious taste

The Farr Brick Co.
CLEVELAND, O.

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

GETHMANN BRICK CO.

Makers of Standard Dry Pressed Face Brick, red in color, both square and round edge.

Also dark colored glazed Face brick.

Samples sent prepaid on request.

GLADBROOK, :: :: IOWA

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.



BRICK HOUSES

And How to Build Them

This book is a complete and clear manual of brick construction, designs and details. It tells what every builder should know of the classification and measurements of brickwork, together with architect's drawings of framing for brick houses and the use of brick veneer.

Up-to-Date and Approved Methods

This book also tells of the miscellaneous uses of brick, including ornamental brick and tile work, chimney and flue construction, brick fireplaces, brick sewers, cisterns and flush tanks, etc. It tells the carpenter and builder everything he should know to undertake brickwork and how to make a success of every job in which brick is used. It is so clearly illustrated by details that there can be no uncertainty in any builder's mind as to each successive step to be taken.

Beautiful Designs Shown

Over sixty designs of the very best modern architectural work are presented in this book. These designs are of attractive, substantial, homelike brick houses of many types. Specifications and working drawings for one of these homes are given in Ideal Homes, August 4th issue of "Brick and Clay Record."

Price, Postpaid, - - - - - - - - $1.00

BOOK DEPARTMENT
BRICK AND CLAY RECORD
CHICAGO

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: *Louisville, O.*

Factory: *Mapleton, O.*

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue



Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

The Sunset Brick & Tile Co.

Established 1890

Office and Plant, Gonzales, Texas

MANUFACTURERS OF

Buff Face and Common Brick
High Grade Face Brick of All Kinds
Fire Brick and Fire Clay

Write or Wire for Samples and Prices

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio



This is the House That the Clay Products Industry Are Building at the Panama-Pacific International Exposition.

To the Clay People of the United States and Canada

GREETINGS!

The House and Garage are being built at San Francisco.

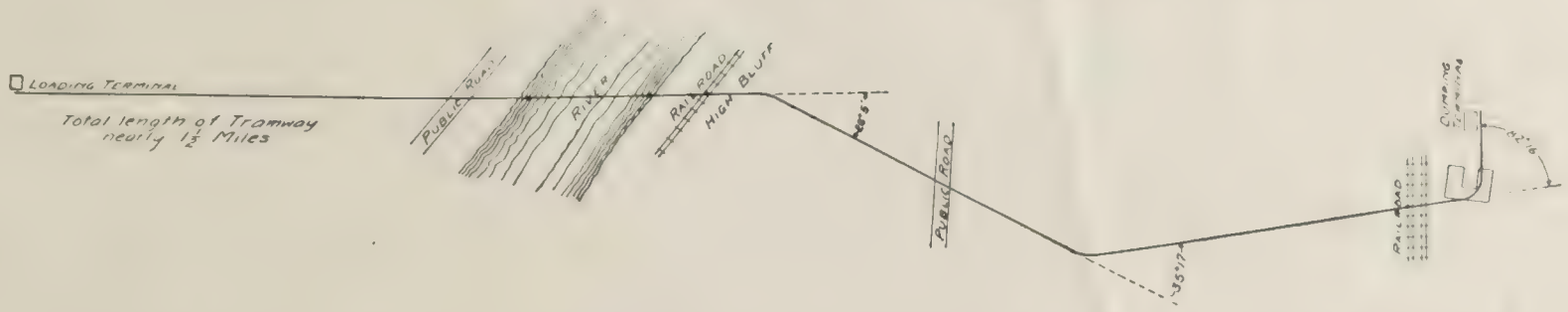
Before the next issue of "Brick and Clay Record" a full statement of what has been done and what is planned will be mailed to the clay people of the country. At the same time an appeal will be made for funds to properly maintain the Exhibit during the life of the Exposition, and to take advantage of the unlimited publicity opportunities that we can use. The amount of publicity we get will depend upon the financial support that is given us. Bear in mind that this is not a local San Francisco, or California, or Western Campaign. It covers the whole United States and Canada. Every clay man in America will benefit. People from all parts of the country will learn that a fire-resisting home can be built at a moderate cost. The fact that those who **manufacture** and those **who sell** brick are co-operating with the members of the Bricklayers Union who **lay** brick, to increase the use of the material that gives us all our bread and butter, is a unique situation which is bound to create discussion in the public press. This will start people thinking. We all know that the great field for increasing the use of brick is wherever homes of moderate cost are **not** being built of brick. We know that brick construction is cheaper in the end, but we want the public to know what we know. This is our great opportunity, and if we take advantage of it we shall prosper. If all who will profit by the increased use of clay products are willing to contribute their share of the cost of this publicity we shall have a fund that will stir the country from the Atlantic to the Pacific.

The lumber people appreciate what our campaign means to them and are organizing for defense. Let us stand together like a wall of brick. The Exposition opens Feb. 20th. Respond promptly when the appeal reaches you. Until we know how much you are willing to do for us, we cannot plan how much we can do for you.

PANAMA-PACIFIC CLAY PRODUCTS ASSOCIATION

CHICAGO, ILLINOIS

AS TO CURVES IN TRAMWAYS



Until the advent of the Lawson Tramway, the curve has been a point to be avoided at almost any cost—necessarily so because of the severe side strain imposed upon the tall towers inseparable from the bucket tramways. There is no room to discuss this in an advertisement but it is fully treated in our Bulletin H along with other details and adaptations. The curve or angle presents almost no difficulties in the Lawson Tramway. The construction is such that side strain is entirely eliminated except the negligible strain arising from the traction rope. There are no towers—the structure is close to the ground—and the added expense for the angle is almost nominal.

The line cut shows one tramway that has been in successful operation for several years. The total length is a little under 1½ miles. There are three curves aggregating a total of 145 degrees 38 ft., or very nearly a complete half-turn. It is operated with 80 cars each carrying from 1200 to 1500 lbs. of rock in addition to the weight of the car. The speed is 400 ft. per minute and the total traffic is 700 tons per day. There is a grade of about 100 ft. in the total length, all against the load. The final curve of nearly a right angle is on the top of the main mill building. The tramway crosses several public roads, two railroads, and one river—the last on a span of about 700 ft.

While it is manifest that a straight line is preferable and naturally the cheapest, the Lawson Tramway has no limitations in regard to curvature. Any number of angles can be negotiated at an increase of cost which is almost nominal.

Our bulletins A and B will be found interesting and the services of our Engineering Department are placed at the disposition of our clients. Lay your case before us with as complete data as possible, and we will give it our best attention. Very respectfully,

AMBURSEN COMPANY (*Tramway Dept.*), 61 Broadway, New York

See That Flange? ——→

That is the important Patented Feature of the

MATHEWS GRAVITY BRICK CONVEYER

This simple device acts as a guard rail, but is a part of the roller and revolves with it, enabling brick to be conveyed long distances on a very slight grade.



For all Brick Handling purposes, under all conditions, the Mathews conveyer is the only device now in successful use.

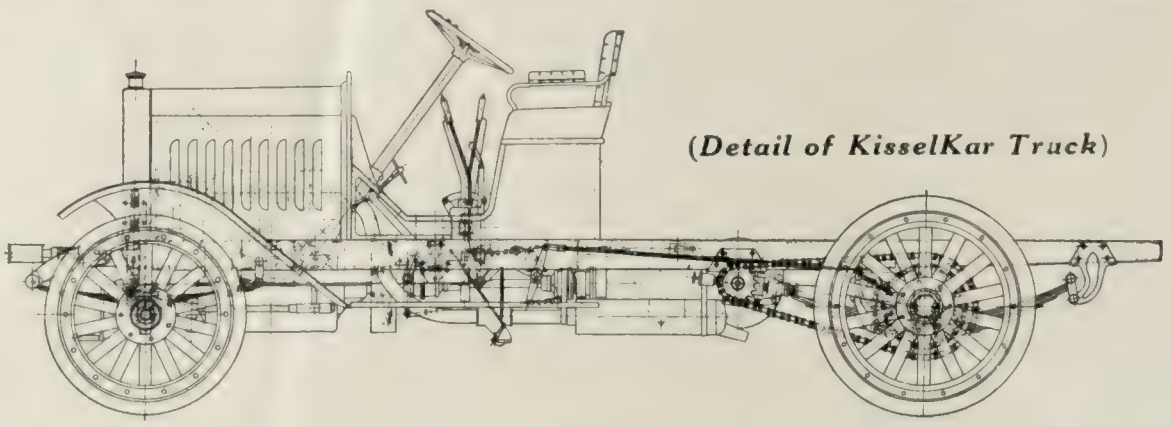
No power required.
Easy to operate.
Cheap labor employed.
Portable.
Strong and durable.

Ask for Catalog and list of users.

Mathews Gravity Carrier Co.

Branch Offices In All Leading American Cities.

Main Office and Factory ELLWOOD CITY, PA.
Branch Factories:-TORONTO, ONT. LONDON, ENG.



(Detail of KisselKar Truck)

Let KisselKar Truck Owners Tell You Their Story

If you are going to buy a truck, the place to look for information **is among present owners.**

Find out what KisselKar Trucks have done for men in **your line of business.** The Kissel Motor Car Company will be glad to give you the names.

See them or, if at a distance, write them. They will tell you just how sturdy and dependable KisselKar Trucks are and what you can expect them to accomplish.

KISSELKAR TRUCKS

are used to advantage in two hundred lines of business. **In many cases they have paid for themselves the first year.**

There are six sizes of KisselKar Trucks—1500 lbs. 1, 1½, 2½, 3½ and 6 tons carrying capacity. Special bodies can be built for any requirement.

Send for illustrated truck portfolio—tersely in words, graphically in pictures.

Kissel Motor Car Company,

568 Kissel Avenue, Hartford, Wisconsin

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Baltimore, Pittsburgh, Cleveland, San Francisco, Detroit, Los Angeles, Seattle, Buffalo, Rochester, Columbus and 300 other principal points.

The Crowding Motion And The Full Circle Swing

Are Distinctive Features of

Thew Automatic Shovels

Enabling them to handle either shallow or deep cuts successfully and economically and furnishing a prying motion that is particularly effective in shales and fireclay.



Are Cost-Saving Features That Make

Thew Automatic Shovels

The standard for brick yards. **300 Brick Manufacturers** are now using Thew Shovels and will gladly tell you what they are saving with their Thews. Write for Catalogue A and list of Thew Owners near you.

The Thew Automatic Shovel Co., Lorain, Ohio

SAWYER

THE · ALL · 'ROUND · BELT ·



Write for Booklet

SAWYER CANVAS BELTING

Sawyer Belting Company

Cleveland, O.

SAWYER CANVAS BELTING

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.

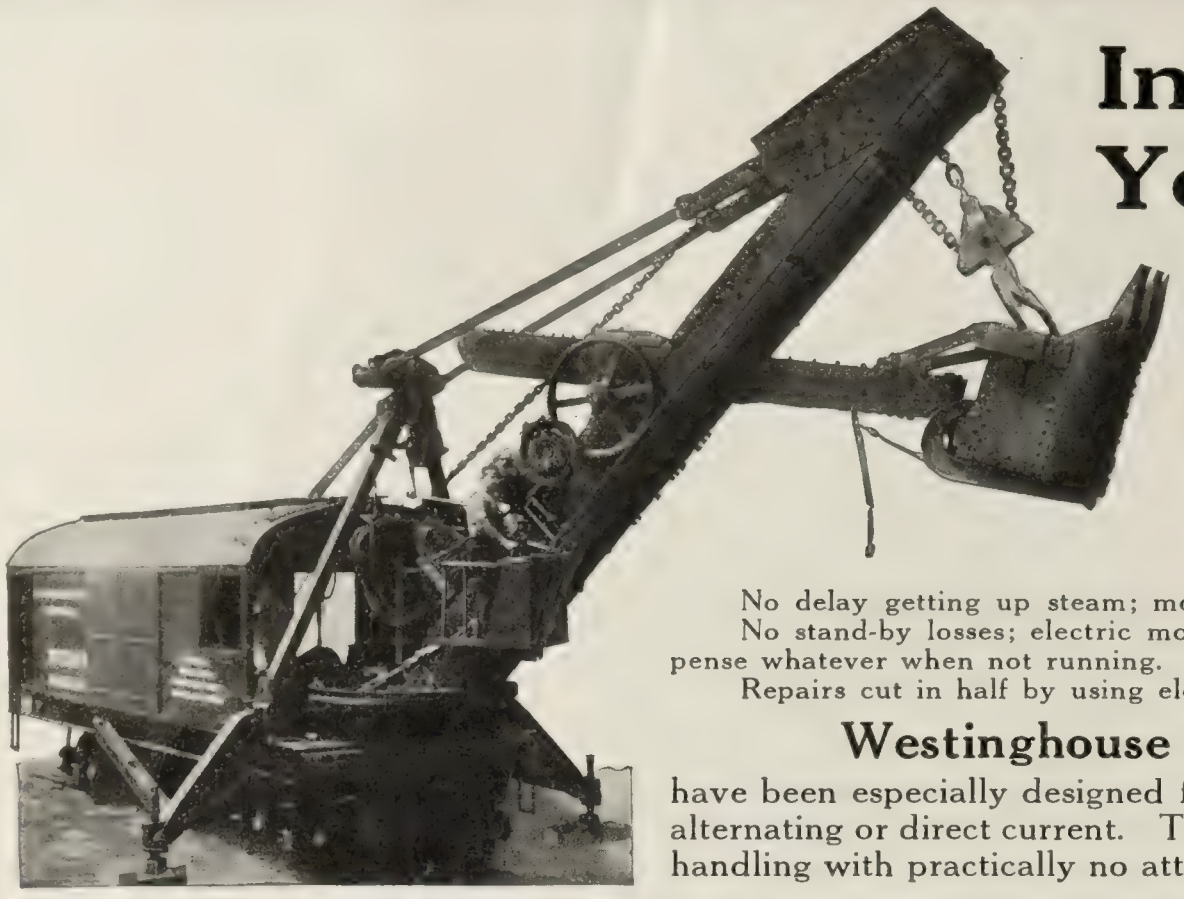


This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia



Increase Your Profits

On your excavation by using electric shovels driven by Westinghouse motors. Practically any man can operate an electric shovel, while a steam driven shovel requires a licensed engineer and a skilled fireman.

No hauling of coal and water.
Boiler troubles eliminated.
No delay getting up steam; motor always ready.
No stand-by losses; electric motor driven shovels carry no power expense whatever when not running.
Repairs cut in half by using electric shovels.

Westinghouse Electric Motors

have been especially designed for operation of shovels, on either alternating or direct current. They withstand the roughest kind of handling with practically no attention except an occasional oiling.

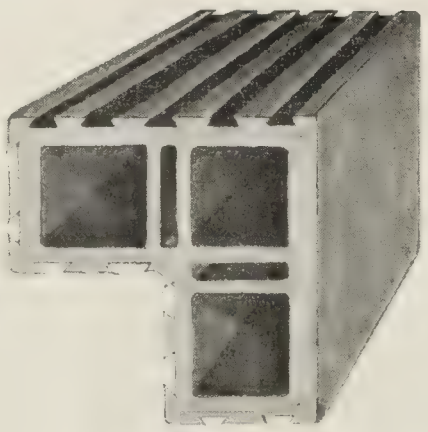
Over 125 electric shovels driven by Westinghouse Motors in successful operation today.
Write for DL-3710.

Westinghouse Electric & Manufacturing Co.

Sales Offices in all large American Cities — East Pittsburgh, Pa.

Made in U. S. A. — Made in Canada

Samson



Tile

Interlocking

LET "SAMSON" BE YOUR SLOGAN.

SAMSON INTERLOCKING TILE makes a house like a thermos bottle because of the horizontal dead air cells which the tile form when laid. They render a building frost-proof, fire-proof and non-conductive of moisture and sound.

Write for manufacturing rights.

W. W. Smith

Shallow Lake, Ontario, Can.

"A Man With a Message"
For the Brickman

By this title was Floyd E. Waite heralded after his address at the joint convention of Face Brick Manufacturers and Dealers, held at French Lick, Dec. 8th, 9th and 10th.

Mr. Waite did not appear to the Clay-workers as a "wrecker," but as a "Builder." His talk was constructive.

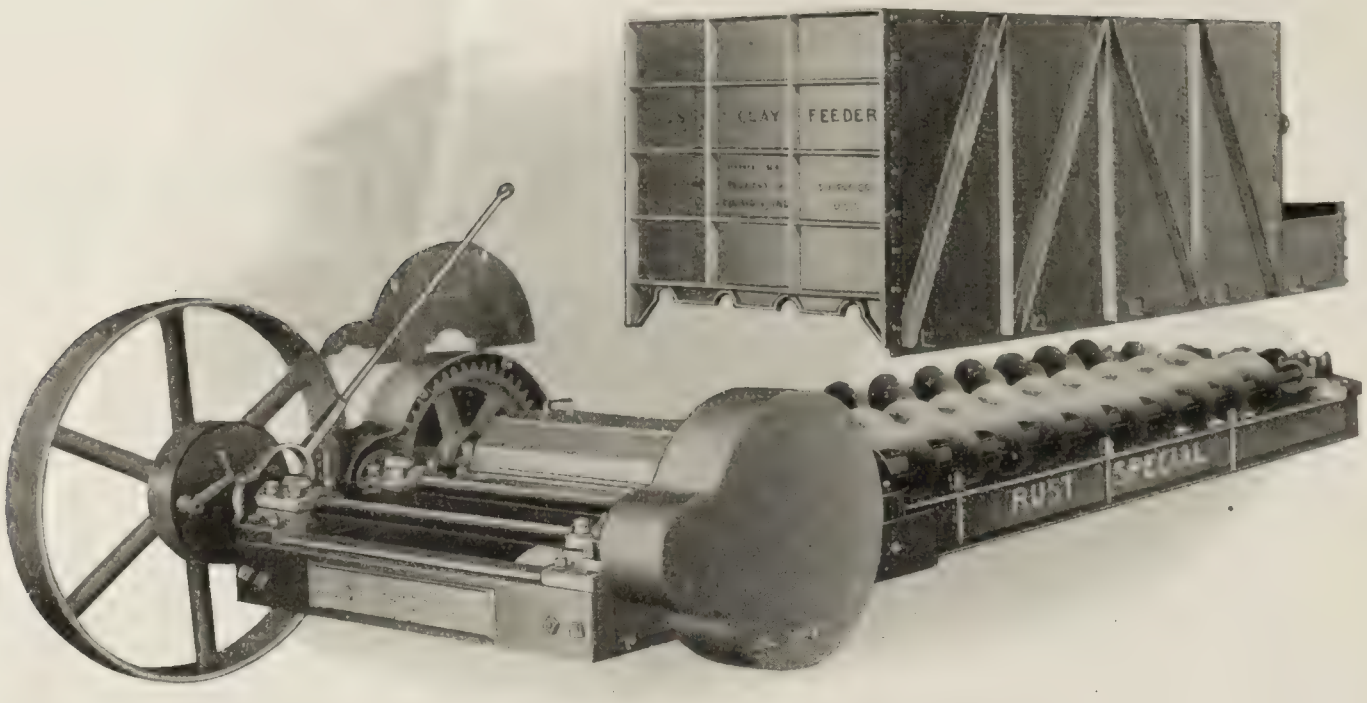
Not only were the weaknesses and the mistakes in the business of promoting fire resisting materials pointed out—a remedy was offered. And it is a perfectly practical, within-your-reach remedy, too.

A printed copy of this address FREE if you write for it. Read this vital message. It's YOUR business.

Society Advocating Fire Elimination

R. P. STODDARD, *Secretary*

340 Leader-News Bldg. CLEVELAND, OHIO



This is the New Rust Special— The Efficient Clayfeeder

It is the improved "Rust"—the last thing in clayfeeders. It has all the good things that "Rust" Clay Feeders have had for the ten years they have been on the market, with the new features that make it the "Efficient" clayfeeder.

It is made extra heavy for hard work and big production. Its gears are encased. They run in oil. They are made either of semi-steel or high grade crucible steel. Its spirals are heavier than other types.

And, besides, it has larger capacity.

It Cuts Out the Labor of Two Men— Saving You $1,125 Per Year!

If you pay your men $2.25 a day for feeding your pugger by hand, the "New Rust Special" will save you just exactly $1,125.00 every year in labor alone.

It Tempers Your Clay Perfectly—Improving Your Product

Set the "Rust Special" at the speed you require, gauge your water feed accordingly and leave it alone. The "Rust" will give you a uniform temper.

It Feeds Your Clay Regularly—Speeding Up Your Plant

Determine the capacity at which your pug mill and auger will run to get the highest efficiency, set the "Rust Special" and leave it alone—the feed will not vary 10 brick per hour.

This means that you will get the best out of your dry pan, your pug mill and your auger and insure a regular delivery to your off-bearers, who speed up and give you more efficiency in the work performed.

We have the most absolute confidence in the "Rust Special." We **know** what it will do and give an absolute guarantee with every machine that it will accomplish all we claim for it.

Marion Machine Foundry & Supply Co.,

Marion, Indiana

Send your Bulletin No. 107 describing the New Rust Special Clay Feeder. We are interested in anything that will cut down the operating expenses of our plant. This request does not obligate us in any manner.

(Signed) .....

(City) .....

(State) .....

(Street) .....

Send for Free 8-Page Bulletin No. 107

We have a bulletin giving a full technical description of the New "Rust Special." Send the coupon at the left and get your copy of this bulletin—it may place you on the road to a profitable plant.

Marion Machine, Foundry & Supply Co.

MARION, IND.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—To get in touch with a man thoroughly familiar with clayworking; one acquainted with novelties preferred. Must have some money to invest in proposition and be in position to take entire charge of manufacturing end. Clay equal to the best; no competition; saving on freight rates alone means big profit. For further particulars address: S-W, Box 8. Jackson, Ala. 1-2.

WANTED—An experienced paving brick setter, one who can also make himself generally useful about paving plant. State age, experience and salary expected. Keystone Clay Co., Wilkes-Barre, Pa. 1-2-1

WANTED — Experienced superintendent for sand-mold brick plant in Wisconsin. Address: The Excelsior Brick Co., Menomonie, Wis. 12-2-3P.

WANTED—First-class salesman, also to manage sales department for an established manufacturer of roofing tile. State salary expected. Address: 1-BD, care of "Brick and Clay Record." 1-2-2

WANTED—POSITIONS.

POSITION WANTED—Gentleman now occupying position as general manager and sales manager of modern brick and hollow tile plant, is desirous of securing similar position, particularly general sales manager, on the Pacific Coast, California preferred. Unexceptional qualifications, business ability and personal references unquestionably satisfactory. Must be a good going concern. Address: 1-C, care of "Brick and Clay Record." 1-4.

WANTED—Position as superintendent of paving and building brick plant, by a man of 15 years' practical experience, and who has held position of superintendent for over 10 years of one of the largest concerns in the United States. Thoroughly understands handling of men and manufacture of the ware at lowest possible cost. Familiar with most modern processes. References. Address: 1-BA, care of "Brick and Clay Record." 1-2-1

WANTED—Position as general manager of face brick, paving or stoneware plant. Technical education; experienced in glazes. References. Address: 1-BH, care of "Brick and Clay Record." 1-2-1

WANTED—Position as superintendent or manager of clayworking plant, by ceramic graduate; four years' practical experience, specializing in sanitary earthenware. Employed at present. References furnished. Address: 1-O, care of "Brick and Clay Record." 1-1-F.

POSITION WANTED—Young hustler wants position as foreman of brick plant on Facific Coast. Thoroughly understands the business, competent to handle men and machinery. References. Address. 1-E, care of "Brick and Clay Record." 1-2-P.

POSITION WANTED—Experienced superintendent in tile and brick manufacture wants position with good company. Have good references and will accept reasonable salary. Address: 1-A, care of "Brick and Clay Record." 1-2.

POSITION WANTED — As superintendent of small building or paving brick plant. Am 25 years old and have thorough knowledge of brickmaking. Plant I have been with closed down. Address: 1-BB, care of "Brick and Clay Record." 1-2-1

WANTED—By capable, experienced man, now engaged, position as superintendent of brick plant. Pacific Coast preferred. References. Address: 1-X, care of "Brick and Clay Record." 1-TF.

WANTED—SECOND-HAND MACHINERY.

WANTED—Hollow-ware machine, dies and table, drag line excavator, hoisting drum and fan blower. C. W. Stookey, Columbia, Mo. 1-2-1P

WANTED—MISCELLANEOUS.

WANTED—to hear from owner of good brick or tile plant. Send price and particulars. D. F. Bush, Minneapolis, Minn. 1-2-1P

FOR SALE—CLAY LANDS.

FOR SALE—Four hundred acre tract of land, located on railroad close to river, composed of fire clay and shale that will make the finest kind of sewer pipe, paving and building brick. Abundance of coal and timber on land with sidetrack on property. Best factory location in middle west. For information write owner, E. N. Peterson, Sterling, Ill. 11-6P

FOR SALE—CLAYWORKING PLANTS.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Tile plant doing good business and in splendid location. For particulars address owner: Charles Lee, North Star, Mich. 12-4-P.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—The Ashaway National Bank will sell a controlling interest in the capital stock of the Ashaway Clay Co. for a nominal sum. The plant was built in 1907 and cost about $70,000. On account of lack of experience and capital, it has never run, all told, a full year. The company has just been reorganized with a capital of $35,000 and no debt. It is a thoroughly modern and up-to-date plant with new equipment throughout, consisting of Freese intermediate size brick machine, capacity up to 60,000 brick per day, disintegrator for preparing the clay, Corliss engine with high pressure boilers, waste heat dryer, direct connecting fan and steam coils for auxiliary heater. The equipment for handling clay from the bank consists of tramway and cars with elevated track at plant and winding drum to hoist cars. There is a switch into the plant with depressed track for loading. Ashaway National Bank, Ashaway, R. I. 1-3.

FOR SALE—Death and affliction have opened an opportunity to acquire the best brick proposition located in Cincinnati territory. Two plants with total capacity of ten million annually, that for years have not failed to produce dividends, besides paying well for management. One or both plants can be had—so look sharp, as this will prove a valuable message to some one. Address Box 54, Builders' and Traders' Exchange, Cincinnati, Ohio. 1-2-1

FOR SALE—Brick plant in good condition; 60 acres of rock. Daily capacity 20,000. Westmoreland County, Pa. Address: MacGregor-Cutler Co., Arrott Power Bldg., Pittsbugh, Pa. 1-2-1P

FOR SALE—Entire tile plant, everything good condition. Drying capacity 100,000 tile. Cannot supply demand. Address: Paulding Clay Works, Paulding, Ohio. 1-2-3P

FOR SALE—Brick and tile factory with a fine bank of shale, makes stiff mud brick and drain tile, 3 in. to 16 in. inclusive. Four downdraft kilns with capacity 365 M. brick. Waste heat dryer capacity 112 cars, 500 brick each. Situated on 3 good railroads and within 45 miles of growing city of 250 M. population. This plant is situated in nice town of 3,500 population, with good schools and churches and good farming community. Address: 1-M, care of "Brick and Clay Record." 1-2.

FOR SALE—Brick and tile plant in town of six thousand, location of State Agricultural College. Soft or stiff-mud, open yard for brick, good dry sheds, kilns for tile all in good condition. Fifteen thousand dollar plant for ten thousand dollars. Address: W. C. Corbett, Corvallis, Ore. 1-3-P.

FOR SALE—Large brick and tile plant, doing good business, well located on two railroads. Fine quality of clay—own our own clay beds. For particulars address: 1-B, care of "Brick and Clay Record." 1-2X.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE.

4 Kiln cars, never been used. Price: $20.00 each.

1 turntable, used but slightly. Price: $30.00.

1 rotary hand-power cutter, No. 62, for either side cut or end cut brick, used but slightly, $200.00.

1 No. 150 two shaft granulator.

The above equipment was all manufactured by the American Clay Machinery Co.

1 steam engine slide valve, 14x20, 75 h. p., first class condition, $200.00.

1 50 h. p. horizontal tubular boiler, 3 in. tubes, good condition, $50.00.

1 duplex steam pump, 3¼x3½x5, Carpenter's make.

3 steam traps, 1 Cookson feed water heater and purifier, and 4,000 ft. 1 inch steam pipe in good condition.

Address: 12-BD, care of "Brick and Clay Record." 12-2-3

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

FOR SALE—Practically new: brick and tile machinery, boilers, engine; Standard steam dryer, and cars. Address: W. E. Lyon & Co., Carthage, Ill. 2-2-TF

Brick and Clay Record Classified Ads Are Result Producers

EQUIPMENT FOR SAND LIME AND CLAY BRICK PLANTS FOR SALE.

Six 6 ft. x 75 ft. dryer cylinders, 150 lb. steam.
Two hundred brick cars.
One 6 ft. x 50 ft. direct heat sand dryer.
Three 5 ft. x 22 ft. Abbe tube mills.
Five 4-mold Boyd brick presses.
Ten 8 ft. Stephens-Adamson mixers.
One 30 in. x 30 ft. belt conveyor.
One 24 in. x 50 ft. belt conveyor.
Four bucket elevators.
One No. 1 Sturtevant mill.
Complete plant for sale, at South River, N. J.
Also includes pumps, boilers, engines, rail, piping, pulleys, shafting, hangers, crushers, dump cars.
Send for complete list and prices which are exceptionally low.

WICKES BROTHERS,
Claremont & West Side Aves.,
Jersey City, N. J. 1-4.

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo. 3-1tf.

FOR SALE—Complete set of motors for a hundred thousand capacity plant. Motors all in good order. The Independence Brick Co., Independence, Kan. 12-2-3

FOR SALE—1 Bensing automatic side cut brick table, complete with off-bearing table. Used for cutting but one kiln of brick. A bargain. 1 10-A Brewer mill, good as new; 1 Brewer 10-ft. pugmill in first-class condition; 1 New Era gas engine, 40 hp., good as new. Milroy Drain Tile Co., Milroy, Ind. 1-2-1

FOR SALE—One Stevenson 9 ft. dry pan, latest model, used but little with all new equipment, guaranteed equal to new. Price $600 to quick buyer. Address: J. S. Miller, Bolivar, Pa. 1-2-1

EQUIPMENT SNAPS.

Machine Tools in perfect operative condition, and equipment in stock for immediate shipment at big money savings.
20 in. x 12 in. Blake Jaw Stone Crusher.
4,000 lb. capacity Otis Power Freight Elevator.
35 H. P. Pierce Horizontal Gasoline Engine.
18½ in. x 12 in. x 10 in. Worthington Duplex Steam Pump.
10 in. x 6 in. x 10 in. Blake Duplex Steam Pump.
50 H. P. Bullock—220 V., 3 ph., 60 cy. Motor.
20 H. P. G. E.—220 V., 3 ph., 60 cy. Motor.
4 yd. 2 side Western Dump Cars, 36 in. Ga.
Structural Steel, Lumber and heavy timbers, pulleys, shafting.
Belting, Pipe, Roofing, Paint; in fact, material of every kind in tremendous quantities always in stock. Best service and lowest prices. Get in touch with us to-day.

Address: HARRIS BROTHERS COMPANY, Owners,
CHICAGO HOUSE WRECKING CO.,
35th and Iron Streets, Chicago.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—Down delivery attachment for Fate machine for making large sizes tile. Scarcely used and a bargain. Carlinville Clay Co., Carlinville, Ill. 11-2TF

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

MISCELLANEOUS.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

Get Rid of that Old Machinery!

It is idle capital where it stands and the longer it lays there, the less valuable it becomes.

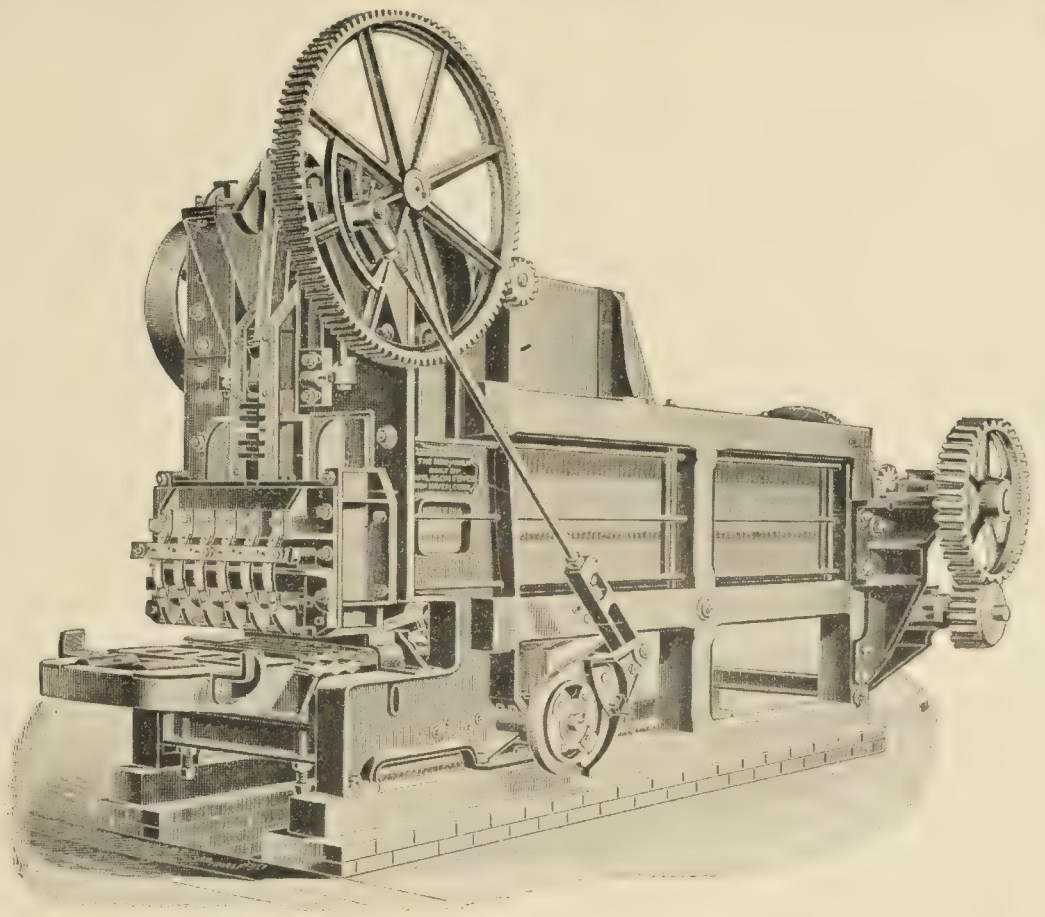
Turn it into real money, while the turning is good. Write up that little ad TODAY and tell us to put it in our classified columns NEXT ISSUE.

Brick and Clay Record **Chicago**

The New Word in the Brick Plant
EFFICIENCY
Finds its Full Definition in

If You Believe That Simplicity of Construction and Unusual Strength mean Long Effectual Machine Life

Write Us



If You Believe That Continuous Good Results Determine Economic Values Rather Than First Cost

Write Us

THE NEW HAVEN NO. 2
HORIZONTAL BRICK MACHINE

Adapted to work any clay. ¶ Suitable for any yard that uses steam for power ¶ Makes solid brick with smooth faces and square edges

BUILT AND SOLD ON HONOR

ASK ANY NEW HAVEN USER

THE FINAL TEST OF VALUE IS EARNING CAPACITY
THE FINAL TEST OF STRENGTH IS WEARING CAPACITY

ASK ANY NEW HAVEN USER

THE EASTERN MACHINERY COMPANY
NEW HAVEN, CONN.

Builders of the Strongest Soft-Clay Brick Machine in the World

The "TECKTONIUS-VOGT" Kiln

Superiority

Viz.

Efficiency --- Endurance --- Economy

IF YOU ARE SEEKING A KILN

that will save you Time, Fuel and Labor, of Watersmoking, Burning and Cooling,

IF YOU WANT A KILN

that will turn out from 95 to 100 per cent perfect ware every time,

IF YOU CONTEMPLATE BUILDING A KILN

that will eliminate the danger of unequal expansion and contraction of the walls, which causes the crown to crack or buckle,

THEN INSTALL

The "Tecktonius-Vogt" Up-and-Down Draft Kiln.

TECKTONIUS-VOGT

Up-and-Down Draft Round Kiln.



SPECIAL PATENTED FEATURES.

Auxiliary Fire Furnace Used in water-smoking. Heats underground flues at each end of open tunnel—part of heat ascending through opening in center and allowing moisture to escape through hole in crown with up-draft.

Solid Grate Fire Furnace Burns finer and cheaper coal without waste. Makes most effective coking table. Creates intense oxidizing heat. Easiest regulated, most economical firing furnace in existence.

Stack Damper Control Convenient counter-weight draft in stack gives perfect control of direction and degree of heat at all times —thus reducing to minimum chances for underburning or overburning.

Testimonial

Hollywood, Ala.,
March 27th, 1914.

E. C. Tecktonius Mfg. Co.
Racine, Wisconsin.

Gentlemen:

Replying to your letter of the 21st inst.

We are pleased to state that your kilns are giving us entire satisfaction, effecting a great saving in fuel, besides delivering a very high percentage of marketable ware.

The construction of the underground flues and blind bottom is such that the heat is evenly distributed over the kiln without the use of dampers.

If one does not get good results with these kilns, it is the fault of the material or burner, and not of the kilns.

Our kilns were built before you designed the up-and-down draft type, and we are sure that even greater results could be secured with them.

We could not say too much in praise of your Band Fasteners as they are the best we have ever seen. We used home-made fasteners on our first kiln and had to rebuild it in three years. We could not be persuaded to buy anything other than the "Tecktonius."

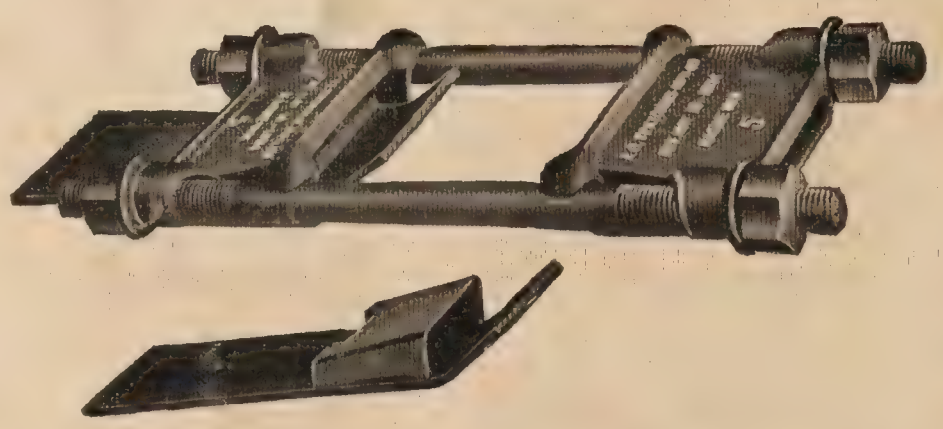
We shall take pleasure in answering any inquiries relative to your kilns or lugs.

Yours very truly,
Alabama Brick & Tile Co.,
W. B. Neher,
Manager.

"Tecktonius" Band Fastener

You wouldn't expect us to know more about your product than you do.

That's your business.



But you would expect us to know more about making Kiln Band Fasteners and other Kiln Iron Equipment.

That has been our business for 25 years. The "Tecktonius" Draw Band Fastener is known the world over as "The Rivetless Lug with the Bull Dog Grip"; the kind that is easy to put on, easy to take off; the kind that is stronger and more lasting than the band itself. Why not use "Tecktonius" and make your kiln construction safe?

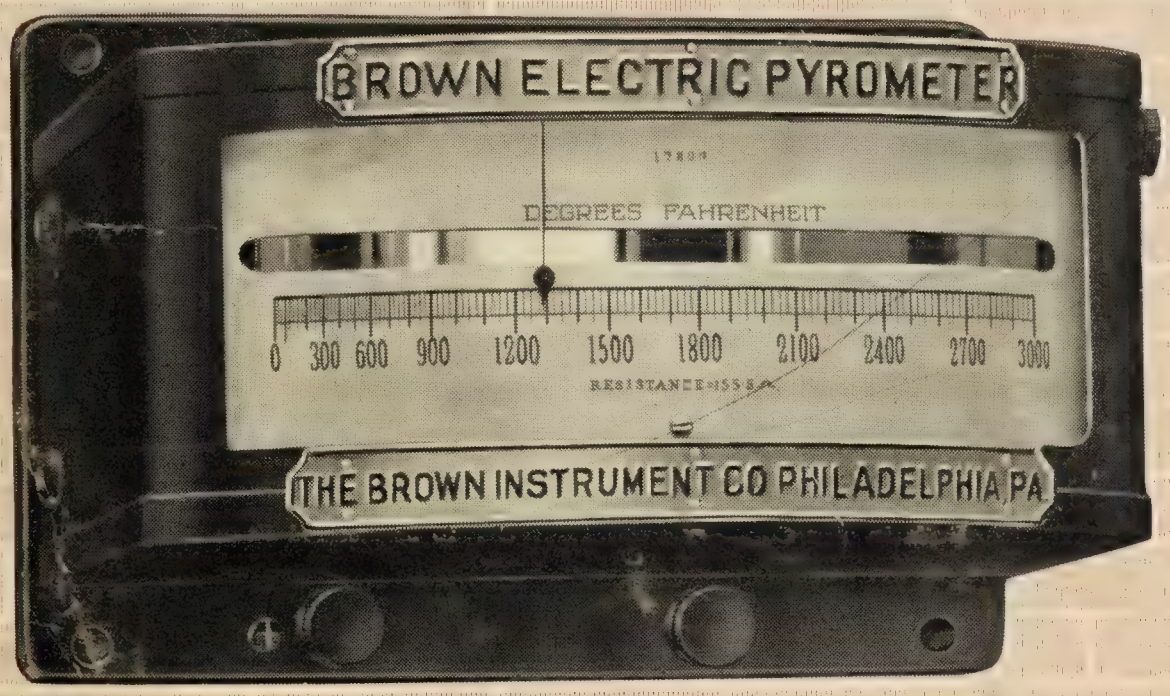
Write for Prices and Terms.

E. C. TECKTONIUS MFG. CO., Racine Junction, Wis., U.S.A.

BRICK and CLAY RECORD

UNIVERSITY OF ILLINOIS
4 FEB 1915

BROWN PYROMETERS



If any one thing has revolutionized the burning of clay in recent years, and made guesswork methods of firing kilns obsolete, it is a Brown Pyrometer installation.

Excessive fuel consumption, excessive time for burning, worry about a kiln's progress, and most important of all, poorly burned clay, should be troubles of by-gone days. Ask any user of Brown Pyrometers if this is not true.

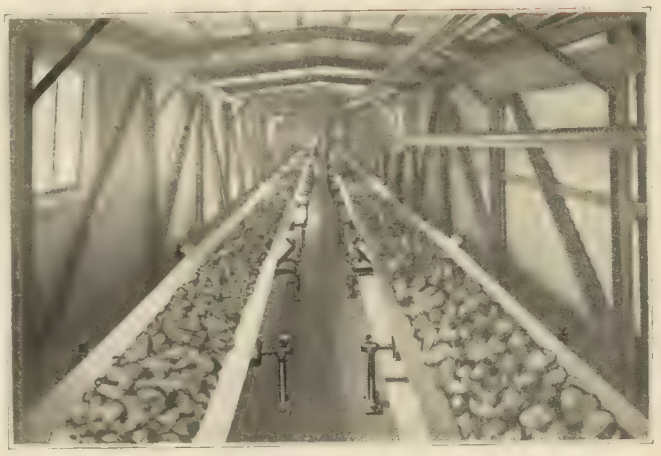
THE BROWN INSTRUMENT CO.
PHILADELPHIA, PA.

NEW YORK PITTSBURGH CHICAGO

Vol. XLVI, No. 3 Chicago February 2, 1915

WELLER-MADE

Complete Clay Handling Systems



Conveying Systems
For Handling Shale, Lump or Ground Clay, Grog, Coal, etc.

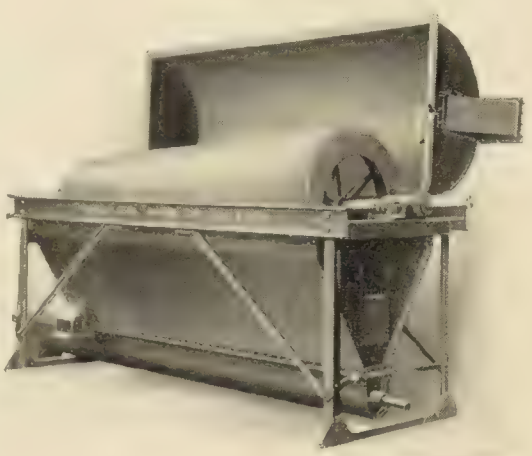


Heavy Steel Elevators
Up to 36 in. pitch and 84 in. wide



Line Shaft Equipment
Complete Systems of Power Transmission by Rope, Belt, Gears, Chains or Shaft

Car Pullers and Hoists
Built in any Capacity from 1 Pit Car to 50 Loaded Standard Gauge Cars.





Revolving Shaking or Stationary Screens, Open or Enclosed
Built to Suit any Conditions or Requirements for Shale, Grog, Clay, etc.

Catalogue J20 describes our line of

Elevating, Conveying & Transmission Machinery

WELLER MFG. CO., Chicago

New York	Baltimore	Akron	St. Louis	Dallas	San Francisco
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Ex.	711 Main St.	316 Rialto Bldg.

LIBRARY OF THE UNIVERSITY OF ILLINOIS 4 FEB 1915

Trautwein DRYERS

INSURE YOUR CAPACITY

To have your plant *doing business* through 1915, you should have a Trautwein Dryer—so getting the

ASSURANCE

OF INCREASED CAPACITY
GREATEST ECONOMY
and LARGEST PROFITS

Our Dryers Accomplish These Things With Ease

Trautwein Dryer & Engineering Co.

Manufacturers—Engineers

Plymouth Building **CHICAGO**

Another Large Manufacturer Uses Smith Steel Shell Kilns

After careful and extended investigation, the Mason City Brick & Tile Co. has closed a contract for Claude Smith Steel Shell Kilns.

This Company (operating six plants) is the largest single company in the west making hollow ware.

WHY HESITATE WHEN SUCCESSFUL MEN USE UP TO DATE METHODS

A card to us brings further information

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Albion Shale Bk. Co....P- 8
Alliance Brick Co.....P-15
Alliance Clay Pro. Co...P- 8
Alsey Brick & Tile Co..P- 6
Alton Brick Co.....P-11
Ambursen Co..... 232
American Clay & Cement Corp.....P-13
American Clay Machy. Co. 287
American Enameled Brick & Tile Co.....P-13
American Process Co... 307
Arbuckle & Co..... 318
Atlas Car & Mfg. Co... 270

Baird Machine & Mfg... 269
Barr Clay Co.....P- 6
Barrett Mfg. Co..... 289
Bartlett & Snow Co.... 290
Bessemer Limestone Co.P- 8
Big Four Clay Co.....P- 8
Bonner & Marshall.....P-15
Bonnot Co..... 313
Bradford Pressed Bk. Co.P-13
Brewer & Co., H..... 312
Brighton Fire Bk. Co... 6
Broderick & Bascom... 234
Brown Instrument Co.. 225
Buckeye Rolling Mill Co. 263

Caldwell Co., W. E.... 263
Canton Grate Co..... 270
Carlyle Paving Bk. Co..P-10
Ceramic Sup. & Cons... 267
Chambers Bros. Co..231-267
Chicago Bk. Machy. Co. 309
Chicago Mfg. & Distributing Co..... 266
Chicago Retort & Fire Brick Co.....P- 4
Classified Ads.....320-321
Clearfield Machine Shops 262
Cleveland Alloys Co.... 268
Copping Bros..... 262
Cling-Surface Co..... 265
Clinton Paving Bk. Co..P-11

Danville Brick Co.....P-10
Davis Fire Brick Co....P- 4
Davenport Loco. Wks.. 264
Deavitt, H. M..... 262
Deckman-Duty Brick Co.P- 8
Dewey Bros., Inc..... 266
Dodge Mfg. Co..... 262
Dover Fire Brick Co....P- 4
DuPont Powder Co..... 275

Eagle Tank Co..... 266
Engelhard, Chas..... 234
Evans Clay Co.....P- 4
Fate Co., The J. D...322-323
Federal Clay Products Co.P- 6
Freese & Co., E. M.... 314
Frink Pyrometer..... 309

Gandy Belting Co..... 277
Gardner, Read & Day.. 265
General Electric Co.... 233
General Traffic Assn.... 290
Gerlock, H. W..... 262
Gethmann Brick Co.....P-13
Globe Brick Co.....P-12

Harris Brick Co.....P- 8
Hamburg Vit. Bk. Co...P-10
Hendrick Mfg. Co..... 264
Hetherington & Berner.. 290
Hinde & Dauch Paper Co. 265
Hocking Valley Bk. Co..P-10
Hook Patent Kiln Co... 279
Hydraulic-Press Brick Co.P-13

Neglected Opportunities

Somewhere, it is said, among the North Carolina mountains, live people who do not know, as yet, that the Civil War is over.

Somewhere, to be just as truthful, there are men, seemingly successful in business, who do not read advertisements.

One of these days, those men who do not avail themselves of the advanced educational work that advertisers are doing for them, will awake to the fact that the momentum which has carried them so far is slowing down.

After that—the deluge.

Men who write for publication are, as a rule, paid to write. The magazine that publishes their articles pays this cost—then the reader, who is a subscriber—pays the publisher.

The men who write advertisements are paid by the advertiser. Then the advertiser pays the publisher to print their work. It is fair to assume, then, that the words which cost the advertiser this double payment, are forceful, thought compelling.

The man who makes a new machine, who constructs a new appliance or system is an advance agent of prosperity to the industry he serves.

If you neglect to read what he pays to have published about the work he is doing for you, you are blinding your eyes to the progress of clayworking.

The letter "P" preceding a number refers to the "Pink Section"

Ironclay Brick Co.....P-12
Jackson & Church Co.. 282
Keim Brick & Tile Co...P-15
Keller Brick Co.....P-13
Kimbell, S. S., Brick Co.P-13
Klose, K. W..... 264

Lakewood Engr. Co.... 271
Lehigh Car Wheel & Axle Works 263
Lehigh Port. Cement Co. 268

MacArthur Brick Co.... 12
Main Belting Co..... 229
Manufacturers Equip. Co. 284
Marinette Iron Works... 280
Marion Machine, Fdy. & Supply Co. 316-317
Marion Steam Shovel Co. 274
Martin Bk. Machine Co. 273
Martin Grate Co..... 276
Maurer & Son, Henry...P- 4
Mayer Brick Co.....P-10
McArthur Brick Co.....P-12
Metropolitan Pav. Bk. Co.P-10
Mexico Bk. & F. Clay Co.P- 6
Murphysboro Pav. Bk. Co.P-11
Murray Iron Wks. Co... 263

N. P. B. M. A.....P- 9
National Roofing Tile Co.P-15
Nelsonville Brick Co....P- 8
Nuttall Co., R. D..... 278

Ohio Galv. & Mfg. Co.. 307
Ohio Kiln Co..... 273

Pettigrew Foundry Co...272
Phillips & McLaren.... 272
Pittsburgh Tile Mfg. Co.P-15
Purington Paving Bk. Co.P-10

Queens Run Fire Bk. Co.P- 4
Quinn, John .....P- 6

Ricketson Mineral Paint. 262
Roessler & Hasslacher. 271
Roll Mfg. Co.....P-15

Sackett Screen & Chute Co. 281
S. A. F. E..... 308
Sawyer Belting Co..... 311
Schaffer Eng. & Eq. Co.. 307
Schofield-Burkett 310
Shawmut Paving Bk. Co. P-10
Smith Co., Claude..... 227
Soisson Fire Bk. Co....P- 4
Southern Fire Bk. & Clay Co. P-12
Standard Dry Kiln Co.. 288
St. Louis Vit. Fire Bk. Co.P- 6
Co. .....P- 7
Steele & Sons, J. C..... 319
Sterling Brick Co.....P- 6
Stupakoff Laboratories . 264
Sturtevant Co., B. F.... 262

Tecktonius Mfg. Co.... 324
Terre Haute Vit. Bk. Co. P-11
Thew Auto Shovel Co... 311
Thwing Instrument Co.. 269
Trautwein Dryer & Engineering Co..... 227

United Brick Co.....P- 8
United States Roofing Tile Co. P-15

Wallace Mfg. Co. 315
Webb Wire Wks..... 290
Wells-Royse 283
Weller Mfg. Co..... 226
Williams & Co., C. K... 262

LEVIATHAN BELTING

Is as natural and as essential as Clay for making Brick successfully

Witnesses for the Claimant
7-8 of Uncle Sam's profit-producing plants

Main Belting Company

Manufacturers and Engineers

Philadelphia
Pittsburgh
New York
Seattle
Chicago
Birmingham

Main Belting Co. of Canada, Ltd.
Montreal Toronto

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

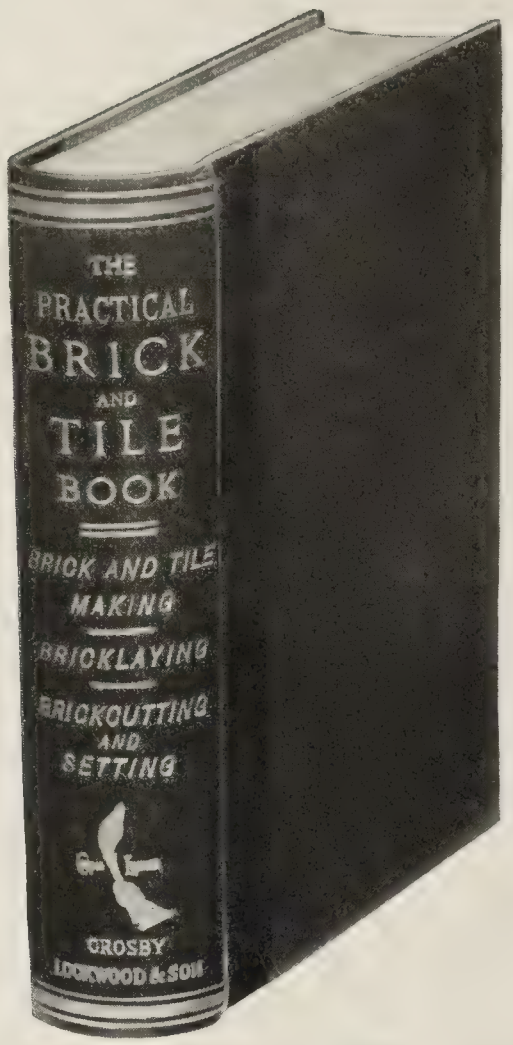
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



550 Pages, 4 1-2 x 7, 245 Illus. . . $2.40

CONTAINING a brief history of brickmaking, and much that will interest and instruct the maker of brick and tile. The processes described are largely English, and it is from England that we have received our best brickmaking knowledge. The text is by Edward Dobson and A. B. Searle.

In addition to this, a section is devoted to practical bricklaying, written by Adam Hammond, and illustrated with sixty-eight wood cuts. This, in turn, is accompanied with a chapter on brick cutting and brick setting, in which arch work is described in a simple and forceful manner.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy).....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller).....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

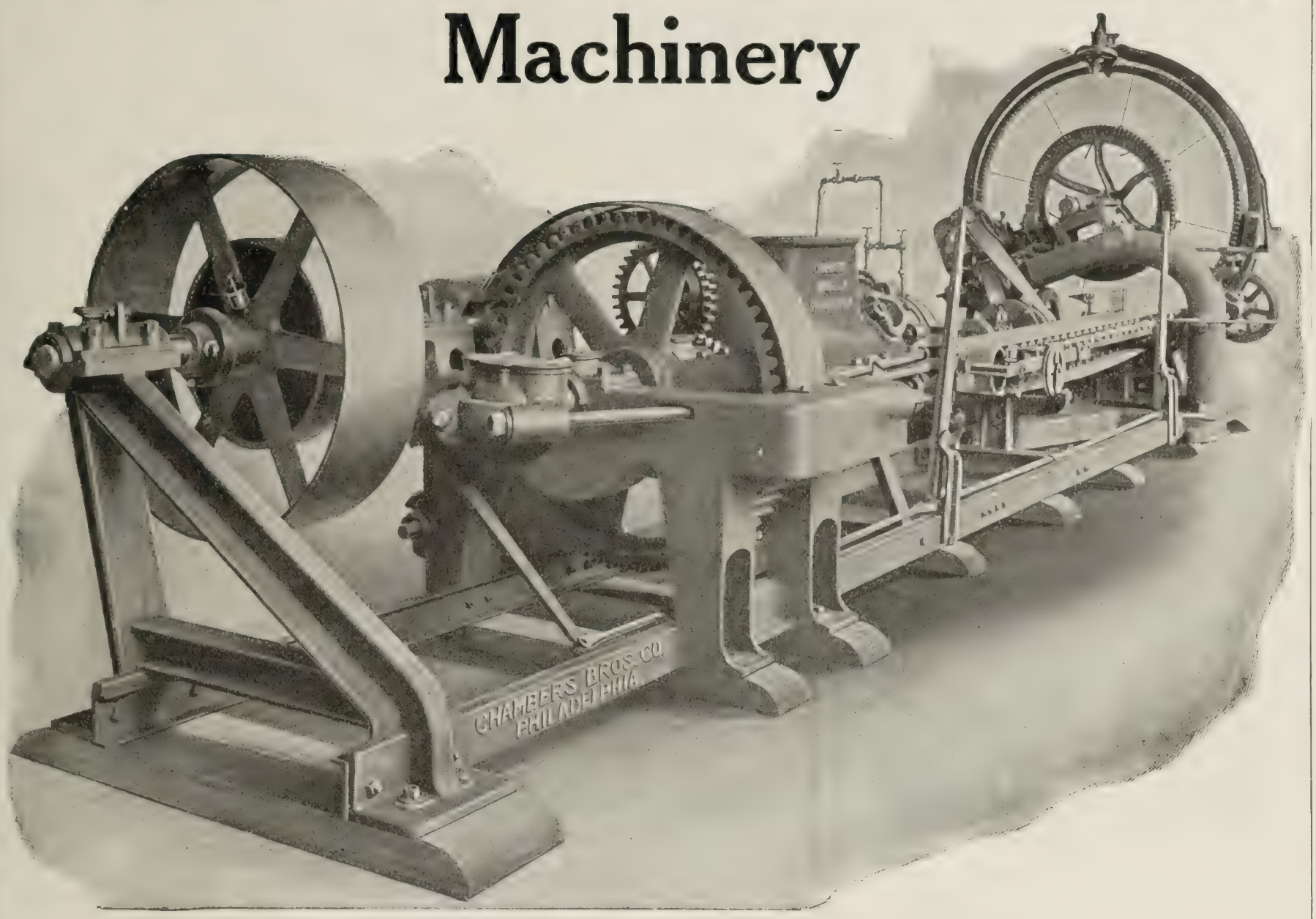
Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 267)

You can have from us, if desired, a firm bid for the Lawson Automatic Tramway.

Delivered and Erected

It is the invariable practice of other builders to make a price delivered F. O. B. cars. The cost of erection is always at the owner's risk, under per diem supervision furnished by the builders and based only on an estimate. While this is just and equitable, the average buyer nevertheless generally prefers to know absolutely what his tramway will cost him complete and ready to run. Now he can know. Why do we have this advantage?



ACROSS THE DESERT

The Ambursen Company is not a manufacturer of wire rope, but is organized as Engineer-Constructors. For ten years we have handled heavy construction amounting to many millions of dollars, in busy times having as high as 3,000 men in the field.

The officers of the Company, in various capacities, have had a construction experience of from twenty to thirty years. We are therefore familiar with every detail of construction economy and are organized and equipped to carry out work of this character on a contract basis.

There is not sufficient space in this advertisement to set forth the character of the information which must be furnished by the purchaser. All this will be brought out by correspondence. In your original inquiry merely give us general data as to length, capacity and grade of line and kind of material handled.

Bulletins A and B describing the Automatic Tramway will be sent on request and several other Bulletins are in preparation.

Very respectfully,

AMBURSEN COMPANY (Tramway Dept.)
61 BROADWAY, NEW YORK



G-E Motor Driving 12 foot by 5 foot Induction Fan

Arial Tramway Driven by G-E Motor

G-E Motors Driving Clay Shed Elevators, Conveyor and 9 foot Freese Pug Mill

Boone Brick Tile and Paving Company, Boone, Iowa

15% Saved in Cost of Operation Plant Capacity Increased 25%

The Boone Brick, Tile and Paving Company, Boone, Iowa, equipped their 70,000 brick plant with motors manufactured by the General Electric Company.

Represses, brick machine, pulverizer, pug mill, elevator and conveyor, aerial tram, induction fan, exhaust fan, disc fan and pump are all driven by G-E motors.

Before this company installed G-E motors they paid $1.38 per ton for coal. They now purchase electric power for approximately two cents per kilowatt, realizing a saving in cost of operation of about 15% and increasing the capacity of their plant 25%.

Our motor drive experts will be pleased to study your local conditions.

General Electric Company

General Office: Schenectady, N. Y.

ADDRESS NEAREST OFFICE

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dayton, Ohio
Denver, Colo.
Des Moines, Ia.
Detroit, Mich.
(Office of agent)
Elmira, N. Y.
Erie, Pa.
Fort Wayne, Ind.
Indianapolis, Ind.
Jacksonville, Fla.
Joplin, Mo.
Kansas City, Mo.
Knoxville, Tenn.
Los Angeles, Cal.
Louisville, Ky.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Tenn.
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
Salt Lake City, Utah
San Francisco, Cal.
St. Louis, Mo.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5244

Motor Agencies in All Large Cities and Towns.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

YELLOW STRAND WIRE ROPE



B & B Tramway Systems
For Short Hauls

and small capacities, a simpler or more economical method of carrying material cannot be thought of than a B. & B. Tramway System of the two-bucket type. The buckets are self-locking.

Maybe a B. & B. Tramway would solve the problem of most economically handling material on your job.

Why not write now for Catalog No. 16 and particulars?

Broderick & Bascom Rope Co.
St. Louis, Mo. Branches { New York / Seattle

WORKS: St. Louis and Seattle.

Instrument perfection has been reached in our Multiple Recorders. They give a permanent Time-Temperature Record on a maximum of Six.

HERAEUS Le Chatelier PYROMETER

"The ultimate pyrometer"

Each record is absolutely and clearly defined from the others. The Instruments have a separate indicating scale for observation. The charts are continuous and have rectangular coordinates. There is no ink or other recording medium to stick or smear or to be replenished. Pen friction is entirely eliminated.

Their extremely high resistance (about 500 ohms) makes possible the use of both Indicating and Recording Instruments on the same Thermocouples, allowing the use of a central Indicating System for the burners and a Recording System for the Superintendent in his office.

With such a system better results can be obtained and the expense of an entire Recording Installation is made unnecessary.



We Supply Pyrometer Installations

"MADE FOR YOU" not "MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD 30 Church Street NEW YORK

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, February 2, 1915

Vol. XLVI No. 3

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

Table of Contents

How Reading is Solving the Housing Problem 242

National Brick Manufacturers' Association Convention 238

Reaching the Farmer 253

Science of Cost Finding 249

The Fire Insurance Contract 251

The Editor's Corner 236

Freight Tariffs and Troubles 260

Letter Box 259

Machinery and Equipment 261

Pottery Notes 280

Questions and Answers 257

Semi-Monthly Trade Review 268

The Superintendent 255

Wake of the News 269

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

DOING YOUR SHARE to hasten the fulfillment of prosperity promises consists of something beside "talking good business" and setting a good example by "buying now."

The next step is to induce others to follow your example, and in a practical way. This finds its epitome in the words "Build Now."

Architects say that their boards have been crowded with plans for the past several months, but add that very few of these buildings will be started at once. Contractors say that they are doing a good deal of "figuring" but the men who sell building material know that the orders which they are receiving are, to a great extent, in the form of reservations rather than calls for immediate shipment.

Every man who has had experience in the real estate or building world knows that when construction is active, labor cost is high. Not that the scale of wages is advanced, but that the workmen, knowing it is easy to obtain employment in case of dissatisfaction, do not strive quite so hard to retain a berth as they do in case of a doubt existing as to where they would find work, if discharged.

The larger contractors must carry investments that they have made, in storage yards, trucks, scaffolding and, in many cases, machinery. Many of them employ superintendents and foremen by the year.

In "slack" building seasons, an over-head expense is carried that the contractors would be glad to pass on to the prospective builder and, since the latter would relieve a trying financial situation, the contractors are, almost invariably, willing to make concessions in the way of profits in order that their equipment may be "earning its board and keep."

Sad as it may seem, producers of building material, seeing it pile up in their sheds, and in some cases, threatening to choke their production, also make concessions and burned clay can be bought cheaper today than later, when 57 varieties of cities will clamor for prompt shipments.

The prospective builder had a reason, some months ago, for hesitation. High rates of interest on building money and, in many cases, a strong disinclination on the part of those who held the purse-strings of building capital, made him cautious.

Today, the financial cloud has a rosy—even gold colored—lining. Eminent financiers have expressed themselves as willing to take on more and more business that promises so satisfactory a rate of interest—so secure a collateral—as does the building loan.

Nothing stands between the prospective builder and a most prosperous enterprise. He can be brought to see this if properly shown.

The architect who is anxious to receive his fee, the contractor who desires to set his plant to work, the dealer who wants to increase his sales, the manufacturer who wants to move his material—all of these can bring prosperity closer if they will preach to the text "Build Now" in every nook and corner of this, the land of promise.

Your Son!

Success is measured to a great degree, by contentment. A man may accumulate a fortune and build a business that leads an industry. Yet if, at the close of his life, he is discontented either with himself or with the business that he has built, that business is not a success so far as he is concerned.

Every once in a while we hear a man saying that, if he had his life to live over again, he would not devote it to this, or that, or some other business. He generally adds that he does not propose to have his sons take up what he is ready to lay down.

A man who has made a near-failure of a clayworking plant figures that the clayworking

business is poor, heavily competitive, uncertain and altogether unsatisfactory. Within a mile or two of him, some other man, with a limited experience but a huge fund of enthusiasm and a wide vision, makes a success in the same line.

The older manufacturer, with all of the prestige given him by a life spent in an honest endeavor to give value, and an invaluable experience gained in the overcoming of unexpected difficulties, fails. The man with none of these advantages, succeeds.

What is it? Luck? Hardly. The gone-to-seed plant reflects its owner's mental make-up. It tells him, ten times a day, of the things that he cannot do. He looks around and at every turn finds a real or fancied fence across his road of progress. He is enchained by the disappointments of the past.

The newer man, stumbling, perhaps, upon a better method, succeeds in making more perfect ware out of the same clay, and at a lower cost. His men and machinery make "quick turns" because he commands them—they do not command him.

If some of the near failures of clayworking would reconsider their resolutions in connection with their sons, and put these boys "in the saddle"—keeping a hold on the checkbook for a brief period until the younger man learned the value of hard earned money—the sons' enthusiasm might make a vast difference in the balance sheets.

We all know what is happening in many plants when the father has passed on. Why not give your boy a chance while you are still here to help him?

Look Around

It may be, on the other hand, that you would find a greater success if you were to take a different view of the industry in which you are engaged. When you find that you cannot make brick or tile or hollow ware at a price that enables you to compete with others and still make a living profit, the fault may lie very close to your own door.

Has it ever occurred to you that, perhaps, you are making the wrong kind of ware?

The mere fact that you have made one kind of material for many years does not mean that this is the only material that you can make. Your clay, which now makes an acceptable brick, might make a very superior hollow building block. Your clay which is now making a passable drain tile, for instance, might be worked into roofing tile.

Experiments along these lines are simple. It does not mean the putting in of new machinery—it is, to a great extent, the asking of a question.

Nearly all of the State Universities maintain ceramic departments. Here a sample of your clay and a question, will bring to you some very interesting information.

After that, it will be very simple to look around the markets that you are serving and see whether, if you were making something else beside your present product, your prices would be better, your profits larger and your general frame of mind more sunny.

A Good Example

In Reading, Pa., they are building brick houses of attractive design, good inside finish and with ample yard room. These houses are located within a possible walking distance from the main centers of employment, and, incidentally, they are being sold at from $2,850 to $3,550.

Every once in a while, we hear of a case of this kind, that refutes the claim made by the exponents of frame construction as to the "high cost of brickwork." The trouble is, that we do not hear of it with sufficient frequency.

Reading's improvement in housing conditions was started by its Chamber of Commerce, with the thought that, if Reading was to grow, it should give heed to the needs of its workers. The great need was better housing.

If the men who make clay products would see the benefit that would come to them by similar movements, they would hasten the day of better building and better markets.

A start in the right direction would be the suggestion to your local Chamber of Commerce, or Business Men's Association, or Civic League, or whatever it may call itself, that better homes for workingmen mean better workingmen, and lower death rates.

Study "How Reading Is Solving Her Housing Problem" that appears on other pages of this magazine. Show the article to your architect—ask him what he thinks of the floor-plans. Then figure for yourself whether a similar project would pay, in the town where you are living or doing business.



National Brick Mfrs.' Association Headquarters Hotel Statler

Convention Dates Feb. 17-20

The City Where

Among Other Things That Make Detroit So Attractive to the Visitor and Tourist Are the Many Excellent Hotels

THE CHOICE of Detroit as the scene of the twenty-ninth annual convention of the National Brick Manufacturers' Convention is most fortunate. Any traveling man will tell you that the "City Where Life is Worth Living" is a city of many attractions for the visitor.

In the first place, hotel accommodations have, for many years past, been second to few cities in the country. The famous old Cadillac, long known as a hostelry of more than passing excellence, the Pontchartrain, modern, beautiful, fireproof and convenient, is as familiar to the man who thinks "Detroit" as the name of the city itself. When to these, and to the host of smaller hotels is added the new Hotel Tuller and, last, the latest of the Statler hotels, it would seem that the last word in hotels had been spoken.

In point of population, Detroit is the seventh city in the Union. In point of phenomenal growth, it would seem first. It has gained sixty-three per cent in ten years and is growing at the rate of 40,000 inhabitants a year.

To amuse this intensely active population, theaters have grown apace. Detroit "plays" the leading starts of the country, the companies that travel out of Chicago and New York giving productions in Detroit playhouses that equal the original showings in the cities named.

The "night life" is all that the sightseer could wish. The flashing signs, the crowds, the brilliantly lighted stores, the thronged restaurants, the lively cabarets—all tell of an urban population that is making money, and spending it with a lavish hand.

The automobile industry has brought a prosperity to Detroit that finds its reflection in an immense number of newly built and individual homes. For the most part, these are of brick. It is said that nearly forty per cent of the homes of Detroit are owned by their occupants—a ratio that leads all American cities of size, according to the United States Census Bureau reports.

Possibly because "Life is Worth Living" in Detroit, its death rate is less than fourteen per cent—you might compare this with the death rate of your own city, and then grasp its significance.

The convention of 1915 promises to be more than usually interesting. In the first place—and to go back to that—it is to be held in Detroit's newest hotel, the latest of the Statlers. This means a great deal to the man who intends to go, or who wants to go, or who, perhaps, has to go. It means that he will have good accommodations, that he will not be over-charged or short-changed. It means that he will have human treatment, that the hotel proprietor will want him to come back some time. This, at least, has been the experience of those who have gone to other conventions, held in other Statler hotels, and there is no reason to believe that this experience will not be repeated at Detroit.

The rates will run from $1.50 to $2.00 per day per person, to $6.00 per day. This will be for "room" only, but the very cheapest of these rooms will have a shower bath and a private toilet. Every modern appliance that can add to the comfort of the guest will be afforded—can more be said?



Life's Worth While

The Latest Addition is the Hotel Statler Where the N. B. M. A. will Hold Its Convention. The Statler Opens Feb. 6

American Ceramic Society Headquarters Hotel Tuller

Convention Dates Feb. 15-17

The official announcement of the National Brick Manufacturers' Association states that no public exhibition of clayworking machinery will be held, but that several manufacturers have expressed their preference for private displays in their own rooms at the Statler. As this is the first national convention of brick men to be held in 1915—the "year of promise"—a large and enthusiastic turnout of the men who are making machinery and appliances for brick manufacturers may be expected.

As usual, inducements are being offered to the mothers, wives, daughters and sisters of brick men, as well as to those who expect to attain to one of these positions at some not-too-distant day. A special committee, made up of ardent Detroit "boosters," has assumed the task of making these ladies think so well of the "City Where Life is Worth Living" that they will at least speak well of it after they have gone back to their homes.

Since Detroit stores offer "bargains" that are quite as tempting as those offered in even larger cities, it is suggested that the careful brickmaker draw a generous check to the order of the fair one who will accompany him to the convention, and leave some room in his suit case for the purpose of bringing home the results of several days' "shopping."

While it may not be of common knowledge, Detroit has been given a unique position in railroad circles, in that it is granted the "stop-over" privilege on any first-class ticket to or from any point in the United States and Canada. This enables the convention visitor who wishes to go beyond Detroit, to buy a through ticket, so taking advantage of any special rate that may be in existence—and, by telling the conductor on the train that he wants to "Stop Over at Detroit" have his ticket so endorsed. It is, of course, necessary to deposit these tickets immediately upon arrival, with the ticket agent at the depot of arrival, and to take them up within ten days.

"Convention week" will begin Monday, February 15, and close Friday, February 20. The first two days will be devoted to the meetings of the executive committee of the National Paving Brick Manufacturers' Association, and on Tuesday evening, a "Night of Good Roads" will be held under the auspices of Will P. Blair and his associates. These days will also be of note to another large and important branch of the clayworking fraternity, as they will mark the annual session of the American Ceramic Society, which will meet at the Hotel Tuller, a few hundred feet away from the Statler. Further mention of this society's convention will appear in another part of this magazine.

The "convention proper" will begin Wednesday, February 17, and, in the evening, an informal smoker will be given in the banquet hall of the Statler. The Detroit "News-Tribune" of January 24, writing of this smoker, says:

"A unique departure will be made at the convention in abandoning the time-honored 'smoker' for a 'smokerette' which the ladies will be invited to attend. Special 'cigars' are being prepared for the ladies, and the committee in

charge predicts that every lady present will 'smoke.' The 'smokerette' will be held at the Statler Wednesday evening, February 17. Further entertainment for the ladies will be provided."

No National Brick Manufacturers' Convention would be complete without the "traditional banquet" and this will be held Thursday evening, February 18, in the state banquet hall of the Statler. Following the rule which has prevailed for several years, it will be a subscription affair, and, as the ladies will grace the occasion, full evening dress will be in order, although not altogether necessary.

Quoting from the official announcement of the National Brick Manufacturers' Association, the following "rules of procedure" are of interest:

All formal resolutions shall be presented in writing.

At the close of each essay or address an opportunity will be afforded for a full discussion of the subject under consideration.

No papers or essays not included in the regular program will be heard unless previously submitted to and approved by the executive committee.

Papers and addresses delivered during the convention become the property of the association, and, in accordance with the rules of the association, may not properly be given out for publication except by or through the secretary.

The proceedings of the convention will be copyrighted to prevent piracy, but the greatest publicity will be given all the convention papers and discussions at the proper time, after the report is complete, not before, when copies of any and all papers and discussions may be had free of charge on application to the secretary.

The following formal papers will be presented during the various sessions, interspersed with informal discussions of such features of the business as the members may desire to consider.

The convention will be opened with prayer by the Rev. Dr. W. E. Sayres, and his Honor, Mayor Oscar B. Marx, will extend a formal welcome on behalf of the city of Detroit.

"Fire Prevention"—Floyd E. Waite, Cleveland, Ohio.

"The Modern Idea"—Wm. J. Bowen, El Paso, Tex.

"The Testing of Large Brick Piers" (Illustrated)—J. H. Griffiths, Pittsburgh, Pa.

"Build with Brick"—John B. Rose, New York, N. Y.

"Simplified Brickyard Accounting"—A. C. Pritchard, Indianapolis, Ind.

"Kiln Expansion and Bracing" (Illustrated)—Carl B. Harrop, E. M., Asst. Prof. Ceramic Engineering, Columbus, Ohio.

"Moderate Cost Brick Architecture" (Illustrated)—Robert Spencer, Jr., Chicago, Ill.

"Producer Gas; Some of Its Advantages and Disadvantages as Applied to Continuous and Periodic Kilns"—James P. Williams, St. Louis, Mo.

"The Survival of the Fittest in Architecture"—F. W. Fitzpatrick, Washington, D. C.

"Problems in Lamination"—Prof. R. T. Stull, Urbana, Ill.

"Accurate Versus Inaccurate Methods of Burning Brick"—J. M. Hoskins, Terre Haute, Ind.

"Progress in the Education of Clayworkers"—Prof. Edward Orton, Columbus, Ohio.

"Taking Soundings"—Warren Griffis, Baltimore, Md.

"Some Things Southern Brick Manufacturers Desire"—J. M. Jenkins, Montgomery, Ala.

Further announcements will be made in the February 16 issue of this magazine and a full report of the convention will be published in the March 2 number.

Knowing that some doubt existed as to the readiness of the Hotel Statler to house the convention, "Brick and Clay Record" sent a special representative to Detroit the night of Jan. 30th. As a result of this personal investigation we are able to report authoritatively that the Hotel Statler will be open and ready for business Saturday, Feb. 6, and, as a consequence, will have a whole week to get its machinery in good running order before the delegates begin to arrive.

"Brick and Clay Record" has engaged its headquarters and, as usual is " on top." Its quarters, where all who are interested in clayworking and ceramics may meet the men who are conducting this magazine, will be on the fourteenth floor of the Hotel Statler and the suite will be large enough to provide accommodations for a goodly number of visitors.

The Feb. 16 issue of this magazine will be mailed to subscribers Tuesday in convention week but in order to supply those who will attend the convention, a large number of extra copies will be shipped to Detroit by express and distributed there. In this edition it is expected that we will be able to publish the names of all machinery and equipment concerns who will have representatives at the convention, together with the names of the representatives and, if possible, the numbers of the rooms which they occupy. This will be published in a convenient form so that convention visitors will be able to find out where they can get the latest and best information on clay plant construction, machinery and appliances, without having to ask the clerk what rooms certain men occupy.

Vitrified Clay Manufacturers Hold Meeting

The regular monthly meeting of the Society of Vitrified Clay Manufacturers was held at the Congress Hotel, Chicago, on Tuesday, January 19, with a fairly good attendance. Regular routine work constituted the program.

J. L. Scott, of the Macomb Sewer Pipe Company, Monmouth, Ill., is president of the Association, and W. H. Bassler, secretary. Offices of the Association are at 811 Chamber of Commerce building, Chicago.

Good Roads Work Growing in Canada.

The second convention of the Canadian and International Good Roads' Association is to be held in Toronto, March 22 to 26, 1915. The first general meeting in the interest of the good-roads movement in Canada was held in Montreal in May, 1914, the convention proving so successful that the new good roads association was formed. It is announced that at the coming convention much attention will be given to the improvement of the highways of Ontario. In addition to the attendance of delegates from all parts of the Dominion, it is expected that a number of representatives of the good-roads organizations in the United States will also be present at the Toronto meeting.

New England Supply Association at Boston.

Since announcing in the January 19 issue of "Brick and Clay Record" that the annual meeting of the New England Builders' Supply Association would be held in Worcester, Mass., during the early part of February, the board of directors of the association has met and decided to change the place of meeting from Worcester to Boston, Mass. The meetings will be held in the New American house on Thursday, February 18.

A number of brick manufacturers and dealers throughout the New England states are members of this association and it is expected that they will be well represented at the meetings.



L. G. ROSE,
Secy-Treas. Northwestern Clay Assn.

Northwest Enjoys Phenomenal Growth

Convention Shows Remarkable Increase in Membership, Financial Resources and Enthusiasm



F. B. MARTIN,
Pres. Northwestern Clay Assn.

WITH AN INCREASE in membership of more than one hundred per cent, the 1915 convention of the Northwestern Clay Association, held in Minneapolis, Minn., January 19 and 20, opened what seems to be indeed a "year of promise." The financial condition of the association was greatly improved—the members enthusiastic and willing to back their enthusiasm with cold cash. New officers were elected, and pledged to constructive work.

The Northwestern Clay Association has recently taken on the habit of doing things, and in the year of 1914 they started out with the idea of increasing their membership, also enhancing their financial condition, not to mention having real conventions.

That they accomplished these things is shown by the good work done at the 1915 convention, held on January 19th and 20th, in Minneapolis, Minn. The membership was increased over 100 per cent and the financial condition bettered by close to 130 per cent and the Association became an organization with a definitely known membership and the major portion of the work is already done towards increasing the membership and the activities of the Club fully 200 per cent more during the year 1915.

The convention was called to order by Vice President B. Frank Pay, of Mankato, Minn., who presided throughout, as the President, M. C. Madsen, was detained at home on account of the illness of his wife.

After the usual business, the first paper was a snappy discussion of advertising for the brick and tile makers given by W. F. Chapman, of the "Improvement Bulletin." Mr. Chapman's paper was an epitome of a series of interrogative letters addressed to the various members of the association and it showed many helpful and business-getting ways of advertising.

John L. Thomas, of the Lloyd-Thomas Company, Chicago, by means of charts and discussion, opened the eyes of the manufacturers to the fact that they have a business contract with the fire insurance company instead of a one-sided gamble of a "one hundred to one shot" variety.

The key note of the entire convention was to get the brick and tile manufacturers to realize their cost and then to help them keep their cost down by the application of up-to-date principles or machinery and the opening gun of this campaign was fired by Wm. C. Koch, of the Twin City Brick Company, of St. Paul, in a very able address on "Cost Finding and Accounting." This was listened to with much interest and serious discussion followed, showing that the members are all awakening to the fact that the rule-of-thumb days are past.

A grave danger is threatening all those who are in Minnesota and who are supplying building materials by the introduction to the Senate of a bill, (Senate File No. 56) which will make the present lien law practically null and void, and it was upon the theme of pointing out the dangers that Edwin A. Merrill, treasurer of the Minneapolis Steel Machinery Company, discoursed. The result will be that much good work will be done by the Northwestern Clay Association in maintaining the lien rights of the brick manufacturers.

All of the papers and lectures presented by C. W. Drake, Pittsburgh, Pa.; G. A. Morrison, South Milwaukee; C. M. Avery, Aurora, Ill.; J. W. Lazear, Chicago, Ill.; and Jacob Voelker, Winona, Minn., helped to bear out the theme of economy in operation and cost finding. The question box, instead of being perfunctory, turned out to be one of the happy surprises of the convention, and a discussion of practically every subject pertaining to the brick and tile business was maintained for nearly four hours. This discussion was led by Charles T. Harris, newly elected secretary of the Hollow Building Tile Manufacturers' Association of America.

As a result of the convention a definite amount of work will be carried out during the year which will benefit the brick and tile industry of the Northwest, particularly in active co-operation with builders and labor unions in furthering the use of burned clay products.

The following officers were elected for the ensuing year: President, F. B. Martin, of the Twin City Brick Company, Minneapolis, Minn.; vice president, B. Frank Pay, of Fowler & Pay, Mankato, Minn.; secretary and treasurer, L. G. Rose, of the Minneapolis Clay Brick Company, Minneapolis, Minn.; directors, M. C. Madsen, of the Hutchinson Brick & Tile Company, Hutchinson, Minn; A. C. Ochs, of the A. C. Ochs Brick & Tile Company, Springfield, Minn.; E. H. Cobb, of the Hydraulic-Press Brick Company, and Jacob Voelker, of Voelker & Groff, of Winona Minn.

How Reading

Is Solving the

Housing Problem

Building in Brick "For Beauty and Economy" Pennsylvania's Mountain City Demonstrates a New Residence Construction

By H. Winslow Fegley



This Attractive Brick House (Type "A") Has Seven Rooms, Rents for $25 a Month and Sells for $3,550.

READING, Pennsylvania, has a population of a hundred thousand, with suburbs in close proximity that add another twenty-five thousand. It lies in the foot hills of two of the most picturesque mountains in the Keystone State, each reaching to an altitude of more than a thousand feet. Over each of these mountains electric and gravity roads are operated.

The nearness of this scenic beauty, and the convenience with which it may be enjoyed, gives Reading an enviable place in the hearts of tourists. Its beauty lies, however, in its surroundings, rather than in the city proper.

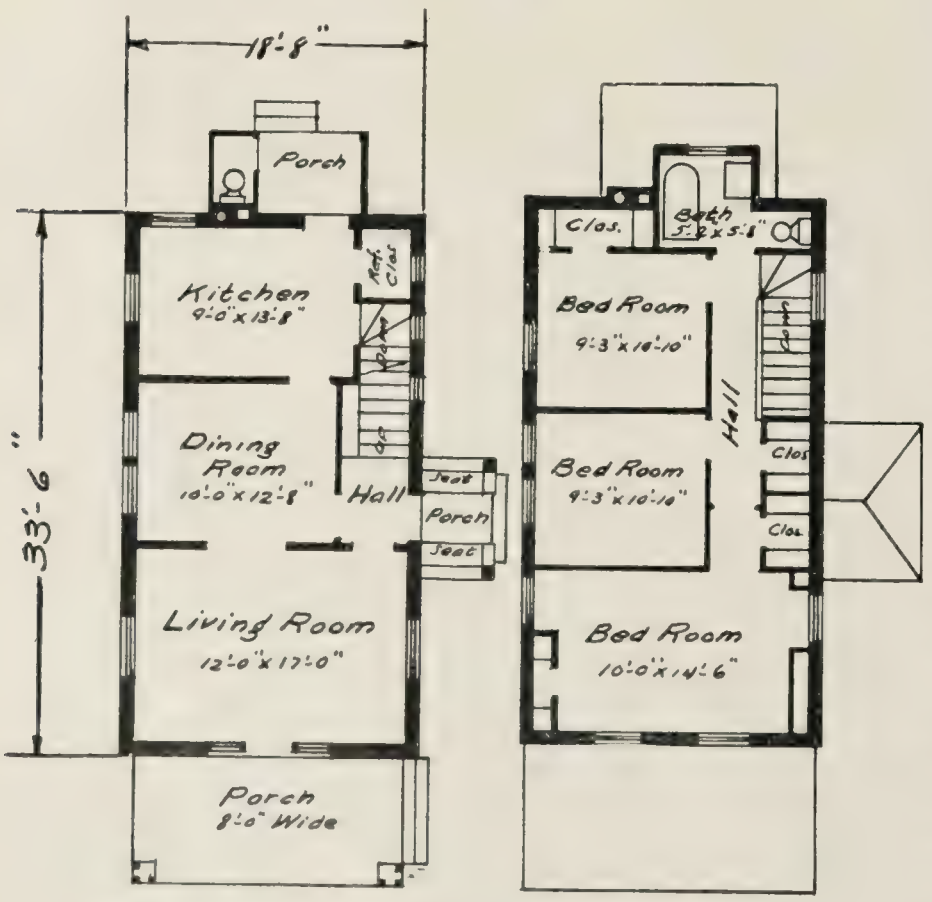
While its growth is stopped by the Schuylkill river, which winds, horseshoe-like, around the base of the Neversink mountain, there is ample room for expansion to the west and north. This growth, however, has been slow, and the majority of Reading's people, for reasons unknown, has preferred to live close to the city's center. As a result, Reading has been classed, by the leading health authorities of the state, as the most congested city within its borders. Its people have lived in rows of houses, of ordinary type—some brick, some frame—the average frontage being fifteen to sixteen feet and the average depth of the lot eighty to eighty-five feet.

Type of House	Sale Price	Assessed valuation	Tax Rate	Rental per yr.
A—7-room	$3,550	$2,400	18 mills	$300
B1—7-room	3,100	2,200	18 mills	250
B2—7-room	3,200	2,300	18 mills	265
C1—8-room	3,350	2,300	18 mills	275
C2—8-room	3,350	2,300	18 mills	275
D1—7-room	2,850	2,000	18 mills	225
D2—7-room	2,850	2,000	18 mills	225
E1—8-room	2,950	1,900	18 mills	250
E2—8-room	2,900	1,850	18 mills	235
E3—8-room	2,900	1,850	18 mills	235
E4—8-room	3,000	2,000	18 mills	260
*F—7-room	3,350	2,200	18 mills	300

C1 and C2 have each a large room on third floor.

E1 has northern exposure and E4 southern exposure. Each has one room on third floor.

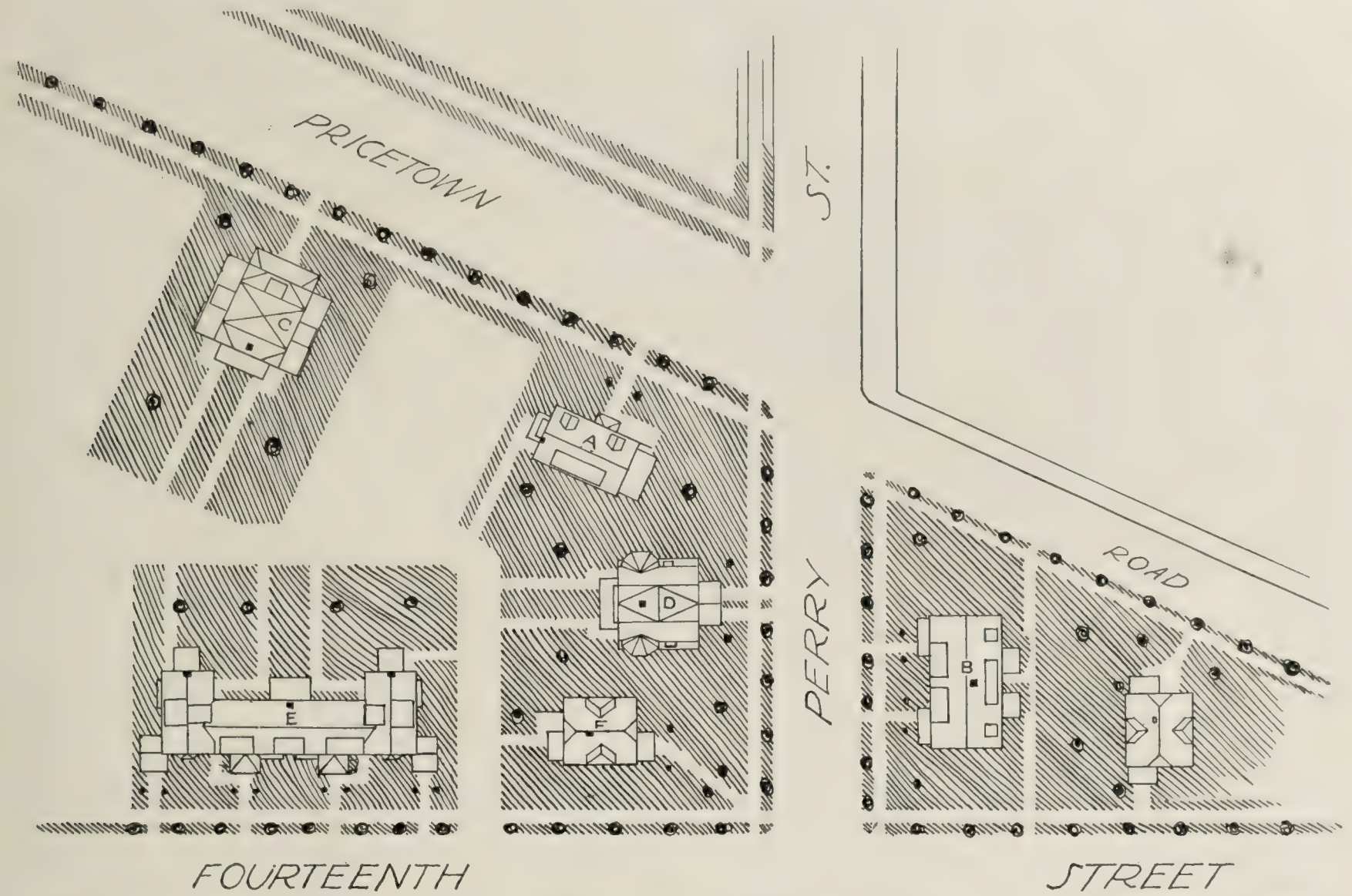
*This house has a reception hall. .Walls are cemented over brick.



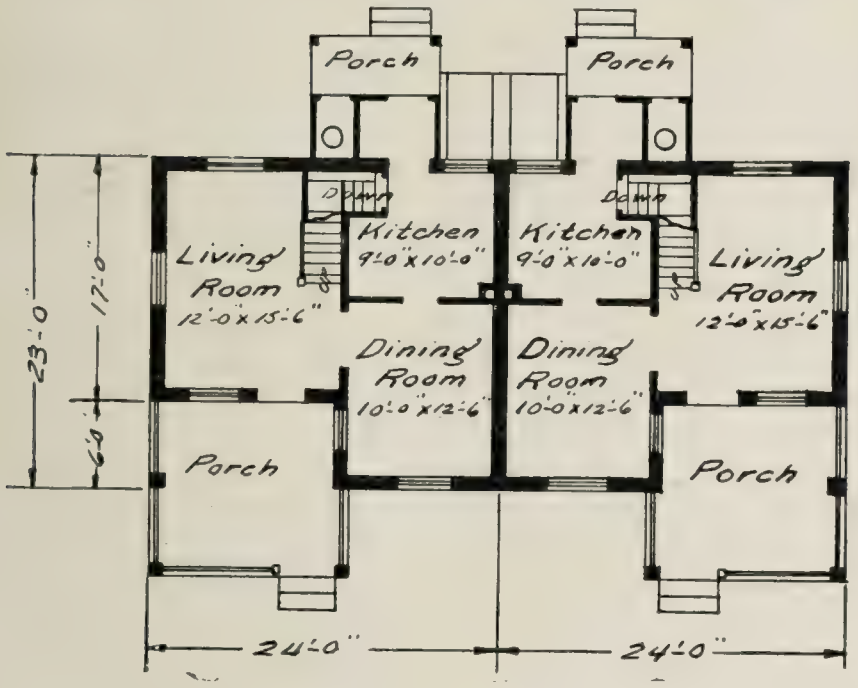
First and Second Floor Plans of Type "A" Houses.

In this, Reading was not unlike many other cities, except that its surroundings offered inducements to better residential locations than were present at other points. The Readingites went to the mountains for fresh air and scenery, but seemingly, thought little of the possibilities of using them for building sites.

It so happened that, two years ago, a large number of business men gathered in Reading. They came from many states, representatives of all of the larger cities in the country being present. They received the usual courtesies and the usual entertainment—which is a trip over the mountains, that they might enjoy the wonderful scenery, the good fresh air that prevailed on the summits and the pure water—not



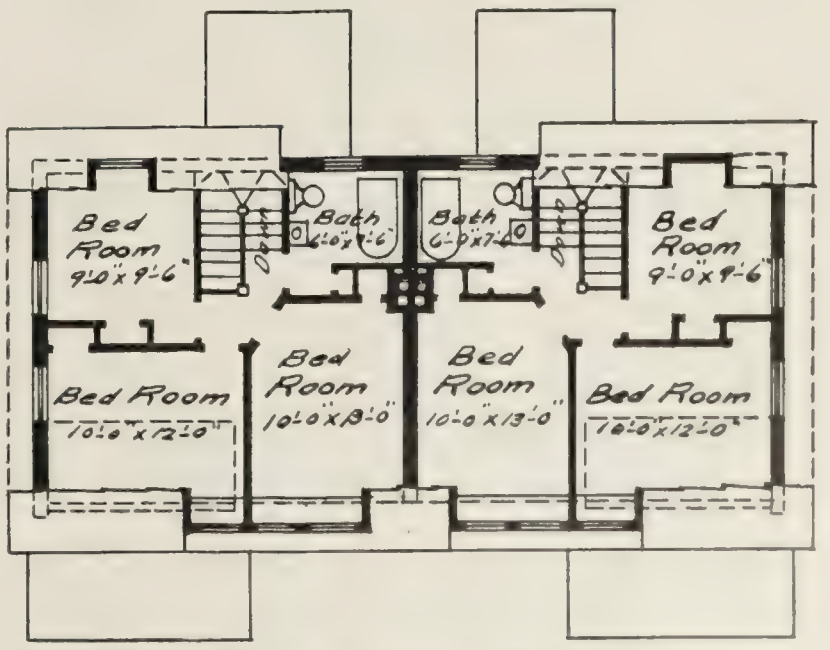
Plot Plan of the Muhlenberg Improvement, Where Reading is Solving Her Housing Problem by Erecting Low-Cost Brick Houses, Similar to the Famous Essen (Germany) Housing Plan.



First Floor Plan of Type "B" Houses.



A Double Brick House (Type "B"), One Side Renting for $21 a Month, the Other for $22. These Houses Sell for $3,100 and $3,200 Respectively.



Second Floor Plan of Type "B" Houses.

to mention the Reading pretzels, for which the city is famous from coast to coast.

Among these business men was one who said he had never, before, looked on so wonderful a panorama. He admitted that it was pleasant to breath the mountain air and drink the mountain dew, and see the mountain scenery, but that Reading, as a city, was impossible.

Looking across the historic Schuylkill into the famous Lebanon valley, he said, "There lies beauty—your city is a big, ugly brickyard. You have not begun to solve your housing problem— you are jammed, close together, hugging the river bank—your eyes are on the ground and your backs to the mountains. You are essentially overcrowded."

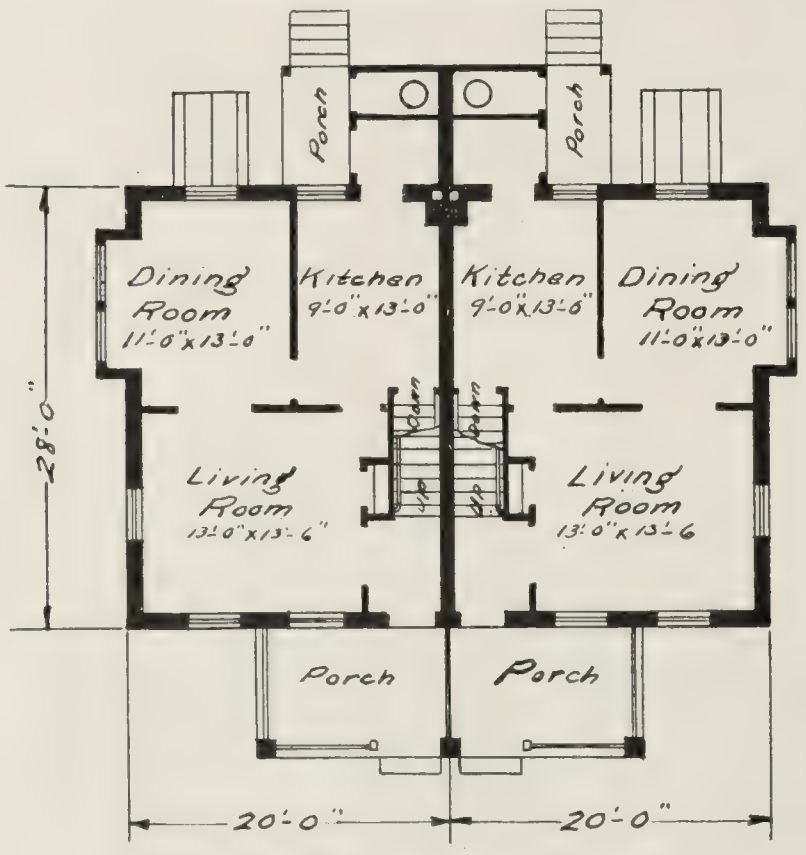
It was no new thought—although expressed in new words. It had been said before, even by Readingites. But it was

always spoken in the wrong company. This time, however, the audience happened to be Readingites who went home and dreamed about the remarks.

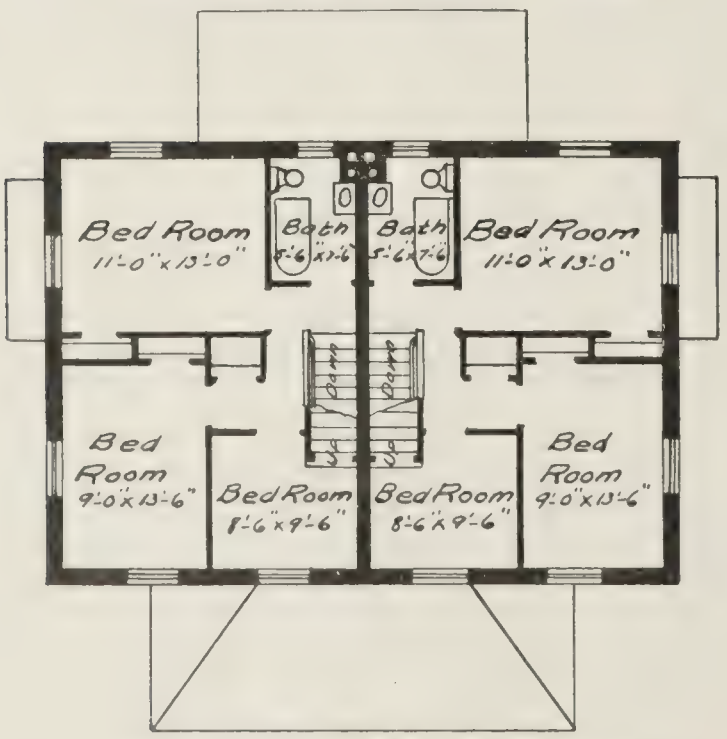
They did not feel offended. They realized that they lived in a city where the majority of its citizens were wage-workers. But they had not realized that the health of these daily toilers should be taken into consideration, that their environment was essential to their success in life, that what they needed most, outside of bread and butter to fill their dinner pails, was a home.



Double Brick House (Type "C"), Each Side Renting for $23 a Month and Selling for $3,350.



First Floor Plan of Type "C" Houses.



Second Floor Plan of Type "C" Houses.

Their conclusion was that the greatest boost Reading could get, during the second decade of the present century, would come from providing homes for these laborers that would be second to none in the country.

Just about at the same time, Reading organized its first Chamber of Commerce, which absorbed the former Board of Trade and the Merchants' Association. Among the various committees appointed was one known as the "Housing Committee," the appointment of which followed an address made by General Adolphus W. Greely, U. S. A., retired, at a Chamber of Commerce dinner.

He had recently returned from Europe and had given minute attention to the study of housing conditions both at home and abroad. He told the Reading citizens that, if they ever expected their city to become a great industrial center, it was absolutely necessary to extend its boundary limits and to adopt an improved system of housing.

The former hint has already been realized and part of Cumru township has been annexed, adding over 1,100 acres of land to the city. This makes it possible to build thousands of workingmen's houses, and gives enough space with each one for a large garden and a garage. His hint as to housing also bore fruit, and as a result, the committee on housing and sanitation, as well as a committee on city planning, were appointed, and both have accomplished some good during the last year.

Their work was given immediate impetus by the Muhlenberg estate, which owned a large, undeveloped tract of ground at the base of Mt. Penn, in the northeastern section of the city, upon which it was decided to erect model houses for workingmen's families, following, in great measure, the plans used in Germany.

The architects chosen for the work (Muhlenberg Brothers) had given more than two years to the study of the housing problem, both in American cities and those of Europe, and, when this project came to a head, they decided that the best design was that which had been adopted at Essen, in Germany—the home of the Krupps.

Certain minor changes were made in these plans, but, for the main, they are very similar to those that have gained the praise of housing experts at every exposition of city-planning that has been held during the past ten years. For the most part, they are of brick, the object being to combine economy with architectural beauty and with serviceability. Some few have followed the European models in being veneered with cement stucco above the first story, but beneath the cement is good, honest, clay brick—not the flimsy metal lath on wood uprights that was so bad an imitation of the Old World's cement-stucco, half timbered houses.

In nearly all instances, the sills and lintels are of brick, a sensible employment of a sensible material. In every way possible, first cost was given less consideration than upkeep.

Each house has an attractive porch at the front entrance, and a kitchen porch as well as a porch outside the living room. Each house has a refrigerator closet, and large clothes and linen closets are the rule. Every house is piped for gas and wired for electricity, lighting fixtures being "combination" so that either system may be used, either together or independently. The fixtures are attractive in design, the architects having felt that these were, in a way, an immovable ornamentation, and worthy of artistic thought.

The same careful thought was given to ventilation, to heating, to plumbing and to decoration. Despite the low figures at which these houses were built, there is no suggestion of shoddiness about them. They are well built, and look it.

Despite all of these excellences, these houses will sell at from $2,850 to $3,550, as will be seen from the figures given in the appended table.

The tax rate is based on ten mills for city tax, five mills for school tax and three mills for county tax, these rates having prevailed for the last few years in Reading. It does not include the water tax, which, if paid by flat rate, will average from $6 to $10 per house per year, but most new houses are metered and paid according to the water used. Neither is fire and storm insurance included in the expense account, which is at the rate of $1.00 per thousand, the valuation being based at a little below the assessed value of the property.

The houses of type "A," as all of the others, were erected with the intention of selling, rather than renting; and this has found a ready response, since they have all been sold to working people, who prefer to pay a part of their wages toward the ownership of a home, to paying a slightly smaller amount, perhaps, for the rental of an inferior house. Comparing the rentals of homes in the more congested districts, however, with those illustrated in this article, we find that this type "A" house should readily rent for $25 a month, and that the others would rent for the amounts shown in the schedule. This type "A" house has an attractive little porch at the entrance, with seats on both sides, and two other porches, one of which is shown in the illustration. The living room is especially large, 12 by 17 feet, and the porch is 8 by 16 feet. The lot is of a rather irregular size, but of such dimensions that a garden can be added.

The type "B" house is semi-detached, one of the houses being on a lot 66 by 100 feet, the other 45 by 80 feet. These houses sell for $3,200 and $3,100 respectively.

In type "C" a room is added, on the third floor, and this, with other features, brings the price up to $3,350. These houses are somewhat more attractive that the other types, in that they front on a boulevard, and have ample garden space at sides and rear.

The "D" house is the lowest priced twin house in the group and sells at $2,850. The lot is 34 by 90 feet for each of the houses, affording enough room for the garden, or for a garage. Each has a front and back porch, a stair hall, and rooms like the other houses in the group. The style of architecture is not unlike that used in Chicago and other western cities.

The "E" group of four houses are very close to the ones used at Essen, Germany, and the architects have been very much complimented for their attractiveness, and also for the useful interior arrangement. The corner houses have lots 34 by 83 feet in size, while the middle houses have 30 foot frontage and 83 feet in depth. This means that the middle homes use the full frontage of 30 feet. The corner houses are deeper and not quite so wide, making the shape of the group similar to the letter "U."

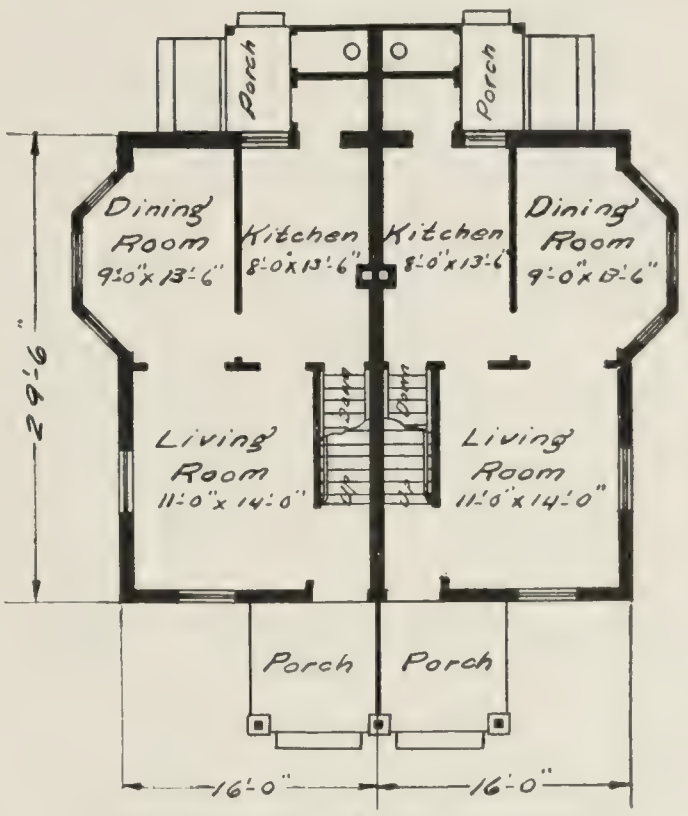
Each has a separate, detached porch, a kitchen porch and a large living room with an open stairway. This living room is 14 ft. 3 in. by 16 ft. 8 in. Each of the corner houses has a room on the third floor, while the two center houses have four rooms on the second floor. The stairway in these four homes is built of North Carolina hard yellow pine, in an artistic style and finish.

The "F" house has a lot of 42 by 90 feet. The brick walls are cemented. There are seven rooms, as well as a reception hall, open stairway and front and rear porches.

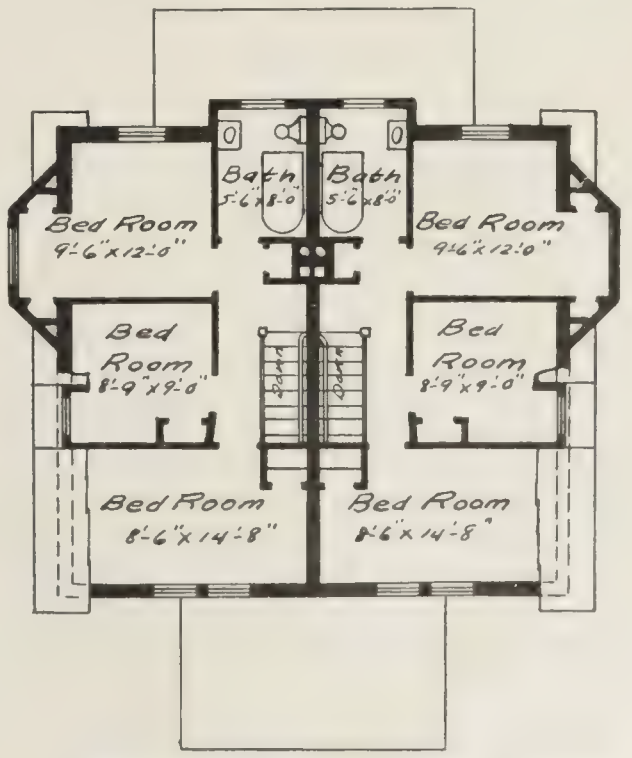
Each of the lots of the entire group is of such a dimension that a garden can be added and there is room for an



Double Brick House (Type "D"), Each Side Renting for $19 a Month and Selling for $2,850.



First Floor Plan of Type "D" Houses.



Second Floor Plan of Type "D" Houses.



Rear View of Type "E" Houses.



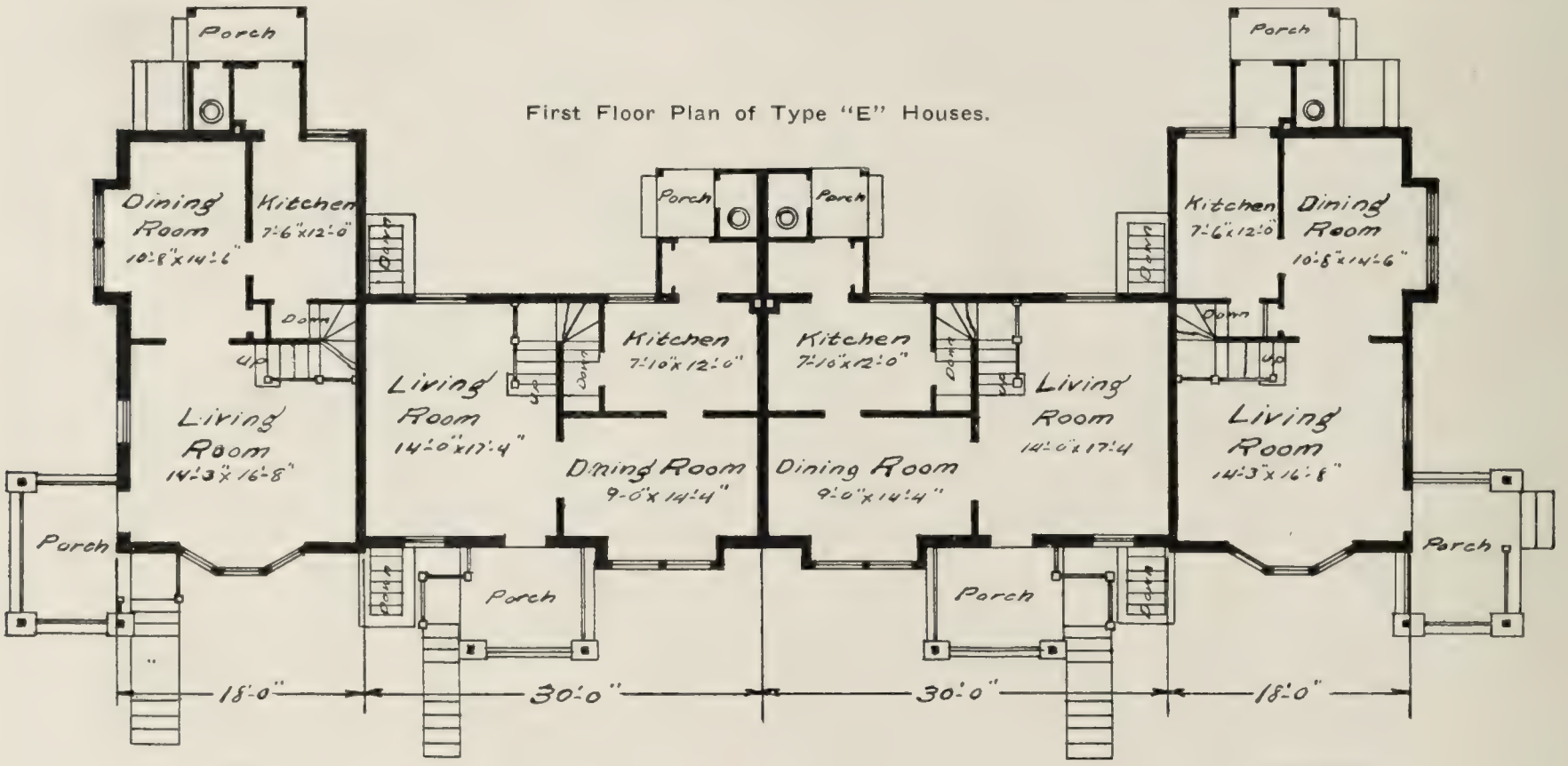
Front View of Type "E" Houses. These Houses Rent for an Average of $21 per Month and Sell for from $2,900 to $3,000.

ordinary garage, with an outlet to the streets or boulevards nearby, without transgressing upon any other lot or premises. In the table given, the bathroom is counted as one room.

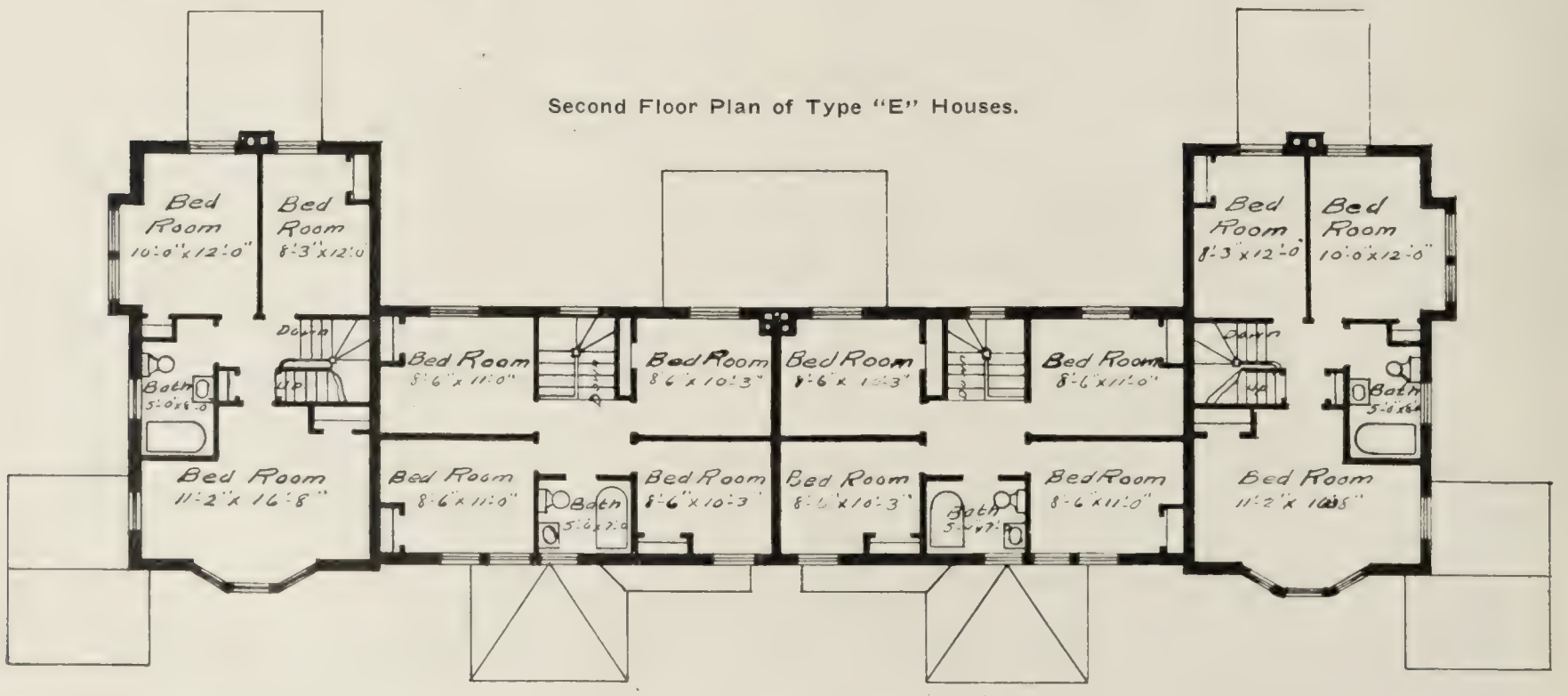
In the group, the German treatment from Essen is followed. The houses are wide and shallow in depth, affording the best light treatment and ventilation. In all of the houses in this group, almost every room has two exposures.

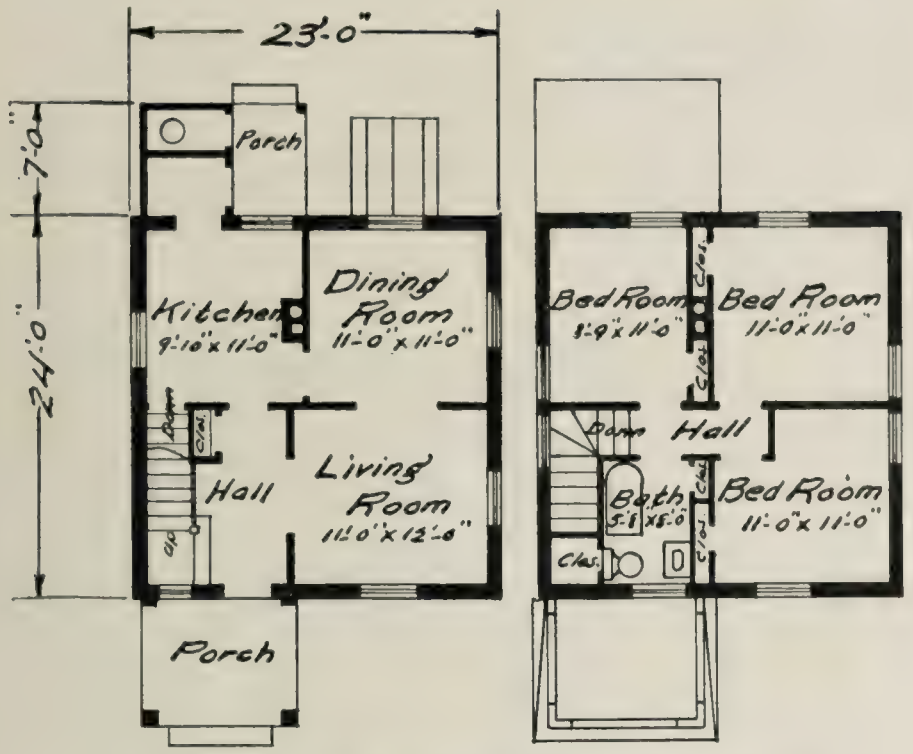
The ground plan that accompanies this article shows the development as facing either Pricetown Road, Perry street or Fourteenth street. The result of the erection of these houses has been such that additional construction of a similar nature is planned in the immediate neighborhood, both

First Floor Plan of Type "E" Houses.



Second Floor Plan of Type "E" Houses.





First and Second Floor Plans of Type "F" Houses.



Type "F" House—Brick with Stucco Veneer, Seven Rooms, Renting for $25 a Month and Selling for $3,350.

by the Muhlenberg estate and by private owners of land along the Pricetown Road.

The cost of maintaining these houses will be at a minimum, for the builders spared little expense in material, getting the best to be had, considering the value of the building operations. The construction was honest from the bricklayer to the carpenter, as no cheap contract work was considered, all the mechanics that were employed having the reputation for good work.

It might be added that the selling price figures are very reasonable, for the location is such that land values are rapidly rising. It is a clean and healthy part of the city, far enough removed from the industrial plants to avoid smoke and soot, and still close enough with trolley conveniences to reach any of the chief industries in a reasonable time; at the same time, these houses are not too far away to afford good exercise for those who wish to walk to their work

Hollow Building Tile Manufacturers' Convention

THE FIRST ANNUAL CONVENTION of the Hollow Building Tile Manufacturers' Association of America was held at the Hotel La Salle, Chicago, on the 19th of January. The morning session was called to order at 11:00 o'clock, by the president, J. A. Maahs, who stated that the meeting was a "get-together" one and after some preliminary remarks as to the prospects of the association, he introduced as permanent secretary, Charles T. Harris, who in a talk as some length, sounded the key note of the organization, its present plans, and hopes for the future. The talk of Secretary Harris covered a wide range, was fertile in suggestions, and eloquent in places, as to the possibilities of hollow-tile as a fire-resisting material, and in the prospects of the association for future benefit to all its members and to the using public at large.

The meeting was then opened for general discussion, and a "get-together," and interesting talks were made by Mr. Johnson of the National Fire Proofing Company, of Chicago; Mr. Whitacre of the Whitcare Fireproofing Company, of Waynesburg, Ohio; Mr. Renkert of the Metropolitan Paving Brick Company, Canton, Ohio; Mr. B. C. Keeler of the Mason City Brick & Tile Company, Mason City, Iowa; Mr. Denison of the Ohio Clay Company, Cleveland, Ohio; Mr. Hale of American Clay Company, Terre Haute, Indiana; Mr. Darling of the Clay Products Company, Chicago; Mr. Randall of the "Clay-Worker"; Mr. Donahoe of "Brick & Clay Record," and others.

At noon the convention adjourned to lunch furnished by the association and served by the hotel, at which there was a fine opportunity for "getting acquainted" and "finding each other out." The lunch was a very sociable and enjoyable occasion, and at 2:30 the meeting was again called to order by the president, J. A. Maahs, and the business of the association was taken up and the Executive Committee was elected for the coming year, consisting of Mr. Maahs, Mr. Allison, Mr. Denison, Mr. Keeler, Mr. Darling, Mr. Whitacre, and Mr. Camp, and a general discussion was had regarding the detailed work of the association, dues based on tonnage, publicity, promotion, etc.

At the close of the afternoon meeting Mr. Johnson of the National Fire Proofing Company, invited the association in a body to go to the Insurance Exchange Building, where an exemplification of the use of hollow tile was shown, in various constructions erected by the National Fire Proofing Company, and later members were treated to a moving-picture show, descriptive of how to build a skyscraper, and use hollow-tile therein.

At the evening meeting of the Executive Committe, the following officers were elected for the coming year: President, J. A. Maahs, Pennsylvania Fire Proofing Company, Erie, Pa.; Vice-president, R. W. Allison, of the National Fire Proofing Company, Pittsburg, Pa.; Treasurer, R. E. Whitacre, of the Whitacre Fireproofing Company, Waynesburg, Ohio.

At the meeting of the association, the following companies were represented: American Clay Company (Frank R. Hale); American Clay Products Company, (W. J. Burke); Buckeye Clay Products Company, (F. W. Stuart); Clay Products Company, (H. H. Tittsworth and F. W. Darling); Camp Conduit Company, (H. H. Camp); Illinois Terra Cotta-Lumber Company, (A. W. Beidler); Metropolitan Paving Brick Company, (H. S. Renkert); Malvern Fire Clay Company, (H. C. Downer); Mason City Brick & Tile Company, (B. C. Keeler); National Fire Proofing Company (R. W. Allison, E. V. Johnson, J. W.

Rollinson, E. R. Beidler, C. C. Baird); Ohio Clay Company, (W. C. Denison); Ohio Fire Proofing Company, (J. H. Perley); Pennsylvania Fireproofing Company (J. A. Maahs); Whitacre Fireproofing Company, (R. E. Whitacre, C. C. Whitacre).

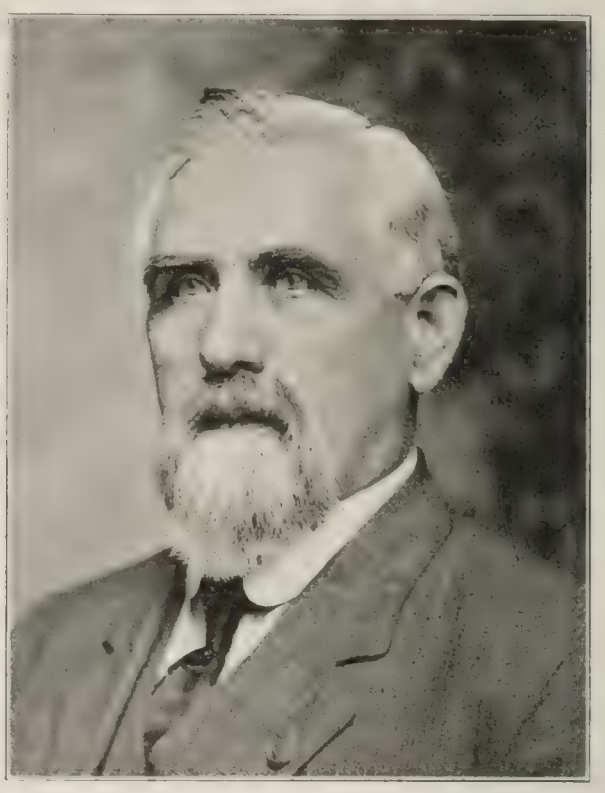
As a beginning of the work planned, the manufacturers felt that as it regards the pushing of their product and the serving of the public, the spirit of the meeting was prophetic and of good results. Secretary Harris expressed himself as well pleased with the beginning; but anticipates an immense amount of detailed work and educational effort before increased results can be made apparent.



SAMUEL WEIDMAN,
Secty. Wisconsin Clay Mfrs. Assn.

Wisconsin Clay Mfrs. Association

Convention to be Held at Milwaukee, Wis., Feb. 4 and 5 Promises Progress in Solving Many Plant Problems



JOHN RINGLE,
Pres. Wisconsin Clay Mfrs. Assn.

ARRANGEMENTS have been completed and delegates are preparing to leave for the opening sesssion of the fifteenth annual convention of the Wisconsin Clay Manufacturers' Association, to be held at the St. Charles Hotel, Milwaukee, Wis., February 4 and 5.

It is the hope of the officers of the association to make the coming convention the best in its history, and to this end they urge the attendance of every Wisconsin clayworker at this meeting.

Among the subjects that will be brought up for discussion will be the application of a simple cost accounting system to small or average size brick yards. Prof. D. W. Morton, of the University of Wisconsin who has had some experience in developing simple accounting systems for small industries, will read a paper on the subject of cost accounting. The increased used of brick and tile—a matter of vital interest to every manufacturer of clay wares—will also be discussed. In addition to these, many other features of interest will appear on the program which follows:

Thursday Morning, February 4th, 10:00 o'clock.

Registration of Members.
Convention called to order.
Report of the Secretary.
Report of the Treasurer.
Reports of Standing Committees.
  Liability and Fire Insurance.
  Legislation and Education.
  Publicity.
  Railway Rates.
President's Address, John Ringle.

Thursday Afternoon, February 4th, 2:00 o'clock.

"The Need of Drain Tile in Wisconsin," Prof. E. R. Jones, Madison.

Discussion—J. J. Marquis, Joseph Fricke.

"How a Cost Accounting System Will Help the Brick Manufacturer," Prof. D. W. Morton, University of Wisconsin, Madison.

Discussion—Oscar Zimbal, F. Vogt, Ed. Fricke.

"My Experience with Brick Kilns and the Kind of Fuel," J. D. Pratt, Menomonie.

Discussion—A. O. Wachter, S. Gunther.

Evening Announcement to be made.

Friday Morning, February 5th, 9:30 o'clock.

"The New Building Code and the Clay Manufacturer," J. G. Hamilton, Grand Rapids.

Discussion—A. W. Hilker, E. H. Korrer.

"Build with Brick," J. E. Randall, Indianapolis.

Discussion—John Ringle, Wm. Fricke.

"The Present Outlook for the Brick and Tile Industries," E. W. Wilson, Mason City, Iowa.

Discussion—Geo. J. Schwarz.

Friday Afternoon, February 5th, 2:00 o'clock.

Reports of Special Committees.
  Auditing.
  Resolutions.
  Nominations.
  Election of Officers.
Unfinished Business.
Appointment of Standing Committees.
Adjournment.

It is hoped that some time will be available during the convention for visiting several of the Milwaukee manufacturing plants that will be of interest to the members.

Official headquarters will be established at the St. Charles Hotel, where convenient and suitable accommodations will be provided.

The secretary has provided each member of the association with a white button on which is printed in red a map of the state of Wisconsin. In white letters on the map are shown the words "Build with Brick. Durability. Safety." The distribution of these buttons is an indication of the progressive spirit of the Wisconsin clayworkers and it is expected that much enthusiasm will result for the "Build with Brick" movement by the wearing of these buttons at the convention.

The Science of Cost Finding

The Third of a Series of Papers On a New Phase in Clay Plant Cost Systems and Their Value

By Edward E. Sheasgreen

IN DEALING WITH THIS NEW SCIENCE—the Science of Cost Finding and Analysis—it must be admitted from the start that we are not dealing with the science of accounting, or "bookkeeping," as accounting is generally understoood. Neither are we dealing with straight accounting problems.

This new science has to do first with diagnosing the ailments of business, whether banking or any other, and then in operating on business just as a surgeon operates for cancer—endeavoring all the time to cut out every fiber and root of the disease, even to the tiniest part, so that the sick may become healthy and strong again. In operating on business, certain instruments, in the shape of a very few simple forms are used, and they are instruments that the average business man and his accountant know little or nothing of or how to use, in bringing about scientific and efficient business conditions. Also in operating on business with these instruments certain fixed *laws* are scientifically followed.

These laws of business are divided into five groups.

1. The five fundamental laws of Cost, on which rests the art of *successfully* operating the whole fabric of business (whether it may be the "business" of *producing labor,* running a home, manufacturing a product, merchandising a product, or the "business" of running any branch of a community's or a world's business).

2. The Laws of Production—those laws that make production possible.

3. The Laws that govern the elements—Time and Material—that enter into a Product.

4. The Laws that Create Cost Items.

5. The Law that properly Places Cost Items where they belong so that all the dollars that enter into a product may ultimately be brought back through the Selling Price, in a "right," or scientific manner.

Now, clayworkers—as other business men—may object to the words "science," "scientific," or "efficiency," wherever and whenever used in business, or in this series of articles. Hence, the first lesson will be that of showing how these words, which we all dislike so much because we do not understand their true and simple meaning, *have a vital part in our every-day lives from babyhood up*—and apart from what we commonly term "business." It will be necessary to start at the very beginning so that all who read may be brought to *think* along the same lines.

Every child is named so that each may be identified, one from another. This naming of children, and of all things, is a scientific method followed out by men to *make it easier* to understand and to be understood. The child soon learns his name, which may be John. When someone speaks the name George, John does not answer. But let John's name be called and John answers at once.

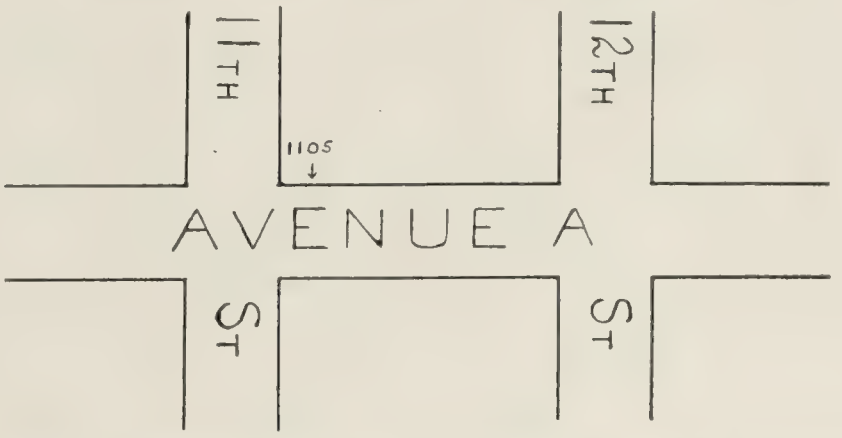
The child at an early age also learns the alphabet—"A" to "Z"—twenty-six letters that are the base of the English language. On these characters stands the whole fabric of the literature of a great people. These few characters, when properly put together by tongue or pen, make it possible for men to communicate with each other in an intelligent and scientific manner.

Hence "A" to "Z" (twenty-six letters) = the Science of the English Language.

The child at about the same time that he is learning his letters, is also learning to count—"one," "two," "three," etc.—and the first ten figures or characters that he will learn, 1, 2, 3, and on to 10, are the base of the Science of Arithmetic —the child in learning his "figures," learns these ten figures on which rests every problem where figures are used, no matter how large or how small the problem may be; no matter whether it exists in one country or another; whether in the clay industry or some other line of endeavor.

Hence, "1," to "10" (ten characters) = the Science of Arithmetic.

When the child has learned his name, and to distribute his "letters," his "figures," and other things properly to the brain "pegs" or "boxes," or "cells," he has also learned where he lives, learning even the street names and numbers, and the numbers of the houses, in the neighborhood. Consequently, when the little one has wandered far from his own locality and has lost himself, and is found crying on the street, and a stranger asks, "What is your name and where do you live," he can answer, "Johnnie Smith of 1105 Avenue A."



Now, because men have "scientifically" arranged the city streets and avenues, giving *names* to each, and even *numbers* to the houses along the same, it is possible for the stranger to at once locate the home of Johnnie Smith and to restore him to his parents—in other words, the "identity" of the child's home and parents is recognized from a great "diversity" of other homes and people. Many people may not look on such an arrangement of streets and houses as being scientific. It is.

But, when the great steamer "Vultrono," on fire in the middle of the great storm-tossed Atlantic ocean, sent her agonizing calls for help, through the wonderful wireless, there came speeding to that *certain* point—that point of longitude and latitude given by her operator—*her* "street and number" out there on the ocean wastes—eleven other great streamers. In a few hours they had found her. And what a picture—what an accomplishment! The whole world

wondered,—the matter of the call and the rescue being hailed as a great achievement of *science!* It was.

Yet, the *method* of "laying out" longitude and latitude lines on the earth and sea is in accordance with the method of "laying out" streets and avenues in a city. Both pieces of work are done in accordance with science and scientific methods; and the "wireless" is no more scientific than "longitude" and "latitude"—the "streets" and "avenues" of the world.

Hence, Science is knowledge arranged under general truths and principles and arrives from the discovery of "Identity" against "Diversity," and Scientific Method is reasoning to proceed from the "Unknown" to the "Known."

Thus one can see how there should be and can be a Science of Cost Finding and Analysis, just as there is a science of names whereby we learn *things* or arithmetic, whereby we can work out mathematical problems; or a Science of the English Language, whereby we converse one with another and create and write the literature and history of a people; or a Science of Astronomy or of Navigation.

This new science brings "efficiency" to a plant just as surely and speedily as the application of science in laying out a city's streets and avenues makes it possible to arrive at a certain destination in the *shortest space of time;* or for the great steamships hastening to the "Vultrono" to travel in the straightest lines possible, thus arriving in the *shortest space of time* on the scene of the accident.

The fact that a person would rather live two blocks from the end of a street car-line than two miles from it shows that "short lines," "less time," "the quickest and the *best* way" are arguments in favor of his living *nearer* the car-line than far from it, and points him out as a person believing in *efficiency* in his own daily round of life at least, even though he might not call such ideas as "efficient."

Efficiency is the shortest space of time between the beginning and the ending of any operation that will allow the greatest quality of service with the least amount of effort or material spent.

The Science of Cost Finding and Analysis is just as scientific and accurate, and just as efficient as the proposition that $2 \times 2 = 4$—one that no person will dispute.

This proposition is not man-made. It dates back to the very beginning of time, to the very *first thought* the Creator had of the *first two things,* and then to the thought of the *next two things,* when the proposition for the first time in the history of all things was made complete that $2 \times 2 = 4$. Two times two cannot make five, as much as some might want it to. It cannot make three as much as others might wish. It can only make four. Two times two makes four because certain laws of Nature govern.

Here we are brought face to face with the tremendous fact that Nature is, after all, the Great Scientist, the Great Systematizer, the Great Efficiency! We find that her laws work constantly and accurately on everything at all times, under all conditions. None of her children, not even the human family, with all its wisdom, with all its knowledge of things, can escape the working of her laws.

The moment one of her laws is broken—that moment a *cost* is paid.

Hence, we face the truth that Cost *is* a great law of Nature, and that Cost *is* always an exact quantity.

If we speak of clay wares and of the cost of brick priced to us at $7.00 a thousand, or of the cost of shoes or of a cigar or a lead pencil, the cost elements of these things, as of all other things, *exist in exact quantities.*

We of the new school of Cost Finding and Analysis have found that there are five lesser laws of cost within the great all-circling law of cost—five wonderful wheels within a more wonderful wheel. For Nature, when given the task of producing and running the business of the Universe recognized the need of, and then established throughout her entire kingdom, the simplest laws of business. Consequently, with these absolute laws laid down and faithfully followed, she has never met with losses in the conduct of her vast institution. She has quietly and harmoniously attained, through a most rigid enforcement of these laws, the height and perfection of business efficiency.

The five fundamental business laws of Nature—her Laws of Cost—are: A. The Law of Balance; B. The Law of Decomposition; C. The Law of Increase; D. The Law of Distribution; E. The Law of Co-Operation.

These five laws of Nature are of tremendous importance to every man in no matter what line of endeavor he may be engaged, and if they are applied to any business transaction or institution—from the production of labor and the management of the home (the most important plant in the world), as to the making of imperishable products from clay, or to banking or to any other business—honest success is bound to come.

But to live up to these and to the other laws—to conduct business by them—means a complete revolution in a man's thoughts, methods and ideas regarding business principles.

What was good enough for the father in a business way, cannot be good enough for the son of today; for, if old methods continue to be followed—and which are bankrupting society today—if the long and the wrong way is persisted in, then a shell of a business will be the empty estate of the son, with worse than bankruptcy for *his* son.

Men must not be longer bound by the ancient things their fathers, their grandfathers, their great grandfathers, or their great, great grandfathers did or did not do in business. Men must forget that their sires did certain things in certain ways forty years ago to get success—for *success to the men of those days often means failure to the men of these days.* Old methods must be shelved. Ox-cart days have passed. Automobile days are here. This is the day of *speed in straight lines.* Where it took an ox-cart days to get to a certain point, the auto makes it in as many hours. The Past with its valuable histories, its own methods, its great achievements, must be forgotten in the Present with *its* possibilities for still greater achievements to be attained by following newer and better lines.

And no business is too old, or too small, or too busy, or too complicated not to be able to be run by this new Science of Business, if the managers will just do *natural* things and get out of the dusty, musty, rusty ruts of habit, willed to them by those who have passed on.

Hence we see that: The New Science of Cost Finding and Business Analysis demands that all business methods and records be *kept straight with the laws of Nature in order to win Right Results.*

In the next article we will investigate the first two business laws of Nature—the Law of Balance and the Law of Decomposition—to see how they can be applied to the business affairs of men.

Will Report Canadian Convention Later.

Owing to lack of time, it is impossible to give a report of the Canadian Clay Products Convention in this issue of "Brick and Clay Record." Among other elections, we are advised that A. F. Greaves-Walker, assistant general manager of the Sun Brick Company, of Toronto, Ont., was elected first vice-president, the first time that a technical man has been elected to office in the Canadian association. A full account of the convention will be published in the next issue of this magazine.

The Fire Insurance Contract

Wherein is Shown How Manufacturers Through Lack of Understanding, Violate Its Terms and Make It Valueless

THIS IS THE THIRD AND LAST of this most valuable series of articles. It carries with it a very important moral—that is—go to your safe, now, and examine every fire-insurance policy that is there. By "examining" is meant the careful reading of every line. If, after that reading, there is something you do not understand, consult with someone that does know something about insurance. Do not listen to the man who says that "all of that stuff doesn't mean anything"—he is misleading you.

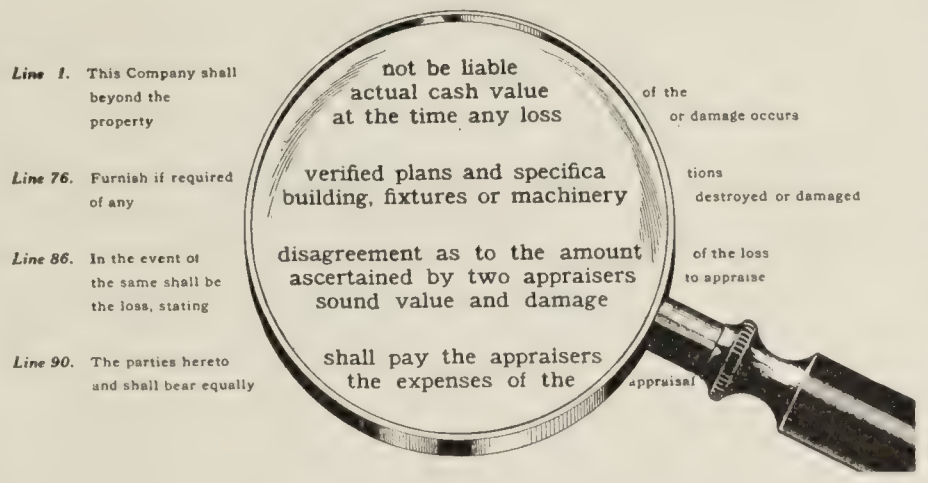
By John J. Thomas

Of the Lloyd-Thomas Company, Chicago.

IN THE OPENING CHAPTER of this series, I called attention to the fact that the average man, while carrying what he calls fire-insurance "policies" on his property, plant, machinery and goods, forgets that these instruments are, in reality, *contracts*—contracts to which he is one of the high contracting parties. I also suggested that, in forgetting they were contracts, he also forgot the necessity of abiding by his part of these agreements—that is, that he, as a rule, violated these contracts many times during the year, and, in so violating them, rendered them worthless.

The average insurance contract or "policy" on clay plants does not obligate the insurance company to the payment of a single penny—even in case of "total loss"—for the reason that the clay plant owner has violated the contract, and, by so doing, rendered it null and void.

For instance—the shutting down of the plant for more than ten consecutive days, unless permission so to do shall have been obtained from the insurance company, voids your insurance. You did not know this? Then you have not read those one-hundred-and-twelve finely printed lines that are a part of your policy.



Another instance—operating your plant later than ten o'clock at night—unless you have the fire insurance company's permission so to do—voids your insurance contract. You did not know that? You see—*you* are the man who ought to read that policy very carefully—you are very vitally interested.

Still another—if mechanics be employed in any of your buildings, engaged in altering or repairing the same, for more than fifteen days at any one time, and the insurance company has not been notified—your insurance contract is void. How about getting it out of the safe—now—and seeing if that is true, or untrue?

Adding some more—if the fire-hazard be increased by *any means* within your control or knowledge, your insurance contract is void. Suppose you look back to the time when you first insured your premises. Did the men smoke—then? Do they smoke—now? If they do, and you know it—you know that they are increasing the fire-hazard.

Let us suppose, for a moment, that, some years ago, you drove a horse and buggy, going to and from the plant. Now you have become modernized, and you ride a motorcycle or drive a car. You put the machine in the same shed that you used to tie the horse in. *You have knowingly increased the fire hazard.* The horse did not either carry or leak oil and gasoline.

The men are given to seeking shelter in a certain part of the shed, say in rainy weather, or at noon time. The straw that you use in packing your brick lies all around. You know that a cigar stub or a cigarette butt may smoulder, in that damp straw, for hours before it breaks into a flame. Those hours may extend to the time when the men quit for the day—that would mean a fire. Do you realize that you are *knowingly increasing the fire hazard* by allowing them to smoke in that place?—that the insurance contract penalizes your lack of precaution by putting itself in a position to consider your contract or "policy" void, in case you report a fire loss?

Then, again, there are some places where the president of your company or some other high official may put you in a place where your fire insurance contracts, upon which you are paying a good sized yearly premium, are next to worthless—here is an instance:

The insurance company must be given notice of any change in *title, interest or possession* in the property covered by the insurance, subsequent to the time that the contract or "policy" was issued. If you have signed any side-track lease or other agreement with any railroad official, it is safer to advise the insurance company, giving it a copy of the agreement you have made with the railroad company. For in it, you may have waived your rights to recover from the railroad, in case of a fire caused by sparks from its locomotives. Had you not waived these rights, the insurance company could, after paying your loss, sue the railroad company under your right of recovery. So you see, that in signing an agreement with the railroad company, you signed away certain rights that really belonged to the insurance company—and you could not blame the insurance company if it left you "high and dry" in case you had a fire loss.

Now it is all very well to take the position that a "good" company will not be technical, and will not enforce all of the provisions of the contract. It is just as reasonable to say

that you can do this or that, or some other thing, even though there be a law against it—and that "no jury in the country would bring in a verdict of guilty." That last statement may be true, but it is mighty unsafe, and the man who is at all careful generally avoids doing something that there is a law against.

So, in the same manner, a careful man avoids violating his fire insurance contract. He begins by understanding it—by knowing that every provision was made after considerable legal advice—perhaps some legal fights. Every provision *is* made to prevent unnecessary fires, *purposeful* fires—fires caused by carelessness or by criminality.

The man who stores gasoline in his barn, without using proper containers, endangers your property (if it adjoins) and, perhaps, the lives of your family. In the absence of an ordinance, especially providing other penalties for such carelessness, the fire insurance companies *do what they can to protect you against it,* by voiding the policies that careless man carries on his buildings.

Every line in that fire insurance contract of yours has a reason. Every line has a purpose. The reason is based on the experience the insurance companies have had in the past, fighting the claims made by men who had suffered by their own carelessness—or who had obviously failed to prevent fire—if not worse. The purpose is to protect you against the results of carelessness—your own, as well as your neighbors. Another purpose is to cut down the fire loss, which is increasing, instead of decreasing, and so bring the day when fire insurance premiums will be lower, and fire insurance profits higher.

Yet, since so much of what may well be called ignorance prevails regarding the attitude of the insurance companies to the men who are carrying insurance, it might be well to suggest that business men in all commercial lines would do well to either *study* insurance, or, if they feel it too technical a subject, arrange for *insurance advice,* just as they now arrange for *legal* advice. It would be inexpensive—it seems as though it were necessary.

And in closing, I want to leave this thought—there is a widespread impression among the public that the insurance "policy" is one that is drawn up entirely in the interests of the insurance company. In fact, certain prejudices exist even in the minds of business men as the logical result of this belief. As a matter of fact, the insurance "policy" is not a one sided contract. It has been drawn as much for your benefit as for the insurance company's. *As a business precaution, you should give this fire insurance contract as much study and consideration as you would any other contract, for, when a fire occurs, it instantly becomes a most important contract—one that might involve your entire fortune and future.*

You must know how to live up to your part of the contract and then act accordingly. The insurance companies have done their part and it is up to you to do yours.

Governor Dunne to Address Illinois Clayworkers

PLANS now being made for the annual meeting of the Illinois Clay Manufacturers' Association, at the New Leland Hotel, Springfield, Ill., February 8, 9 and 10, indicate that it will be the best convention that the association has had for a number of years.

Gov. Edward F. Dunne, of Illinois, will open the convention with an address of welcome, and it is expected that this feature will bring a good attendance to the opening session.

Progress will be the key-note of the convention, as reflected by the subjects of prime interest that appear on the program, which follows:

Monday Morning, February 8.

Registration and getting acquainted.

Monday Afternoon, 1:15 P. M.

Address of Welcome—Gov. Edward F. Dunne.

Response—F. W. DeWolfe, Urbana, Ill.

President's Address—D. C. Haeger, Aurora, Ill.

Our Fire Waste—Walter H. Bennett, State Fire Marshal, Springfield, Ill.

Creating Demand—Warren Ittner, Belleville, Ill.

Working Men's Compensation Law and Possible Legislation—Adrian F. Sherman, Kansas City, Mo.

Build With Brick—J. E. Randall, Indianapolis, Ind.

Monday Evening.

Complimentary theater party.

Tuesday Morning, February 9, 9:00 A. M.

Cost Accounting—J. L. Buckley, Aledo, Ill.

What Should Our Net Gain Be?—B. H. Richards, Edwardsville, Ill.

Efficiency—Fred C. Schwedtman, Springfield, Ill.

Progress of the Ceramic Department, University of Illinois—R. T. Stull, Urbana, Ill.

Tuesday Afternoon, February 9, 1:15 P. M.

Reciprocal Insurance—P. B. Eckel, St. Louis, Mo.

Central Station Electricity vs. Private Plant Electricity—J. F. Jones, St. Louis, Mo.

Problems on Electrification of a Clay Plant—J. W. Robb, Clinton, Ind.

Problems in the Manufacture of Brick and Hollow Ware—Eb. Rogers, Alton, Ill.

Tuesday Evening.

The annual banquet will be held in the New Leland Hotel. With Dr. A. L. Converse, a veteran clayworker of Springfield, as toastmaster, this will be an occasion long to be remembered by those who are fortunate enough to attend.

Wednesday Morning, February 10, 9:00 A. M.

Experiments to Prevent Efflorescence—A. E. Williams, Urbana, Ill.

Reaching the Farmer—Frederic W. Donahoe, Chicago, Ill.

Some Neglected Opportunities in Illinois—R. T. Stull, Urbana, Ill.

Silo Facts—A. P. Grout, Winchester, Ill.

Manufacture of Silo Block—A. E. Williams, Urbana, Ill.

Wednesday Afternoon, 1:15 P. M.

Business session, after which a visit by train will be made to the Springfield Paving Brick Company's plant.

It is the earnest desire of the officers of the association to make this convention productive of the greatest good to the clayworkers of Illinois, and to this end the attendance of every member is urged. As the benefit that will come to you from this conventlon will be in proportion to what you put into it, it is hoped that every member present will take an active part in the discussions as they come up and give his fellow clayworker the benefit of his experience and knowledge.

It is also urged that all those who are intending to be present at this convention make reservations at the earliest possible date, as the legislature is now in session in Springfield, which always makes it more desirable not to wait until the last moment to engage a room and take chances of being disappointed.

Reaching the Farmer

The Fifth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XI.

What is the Best Method of Advertising?

REVIEWING the work of the past two or three months, in which we have studied the problem of increasing the use of clay products in connection with farm buildings and improvements, we find that we have had to confront a well-organized and well-financed advertising campaign, setting forth the virtues of cement, steel and wood—all poor substitutes for the material we make and sell.

We find, too, that our own advertising is unorganized, poorly financed (since it is done individually) and, in many cases, poorly written. We find that the open reading columns of the farm journals have but little to say about burned clay, for the simple reason that burned clay seems to have but little to say about itself.

We find, too, that our methods of selling are crude—that the approved plan is very close to the old finger-in-your-buttonhole method—that personal solicitation is depended upon to make sales.

The science, or art of talking to a thousand—ten thousand or a hundred thousand—men at once, and of talking to them so convincingly that the words and pictures are burned into their brains, is practically undeveloped.

The farmer may think of building a house, a silo, a barn, or a corn crib. He may think of tiling his land. Ten to one, in the case of the house, the barn, the silo or the corn crib—he will, just as soon as he thinks of building, begin to think of *concrete or wood*. And you know why that is. If you do not, it certainly is *not* because it has not been already told. The answer is—*they advertise and you don't*.

Advertising is no new thought to the man who makes brick, or hollow tile or silo block or drain tile—it is no new way of increasing the use of burned clay, but it is a way the efficiency of which is not fully appreciated by the average manufacturer of clay products.

In some of the more prominent farm journals may be seen the advertisements of a few clayworkers who are realizing the value of printers' ink and who are making use of it to increase their sales, but the rank and file of the producers of drain tile, silo block and hollow tile contend, and rightfully, too, that they cannot afford to pay from five to six hundred dollars a year for a two-inch advertisement in the farm paper that will effectively cover their territory.

And even should a large number decide to use this method of increasing their sales, in some states competition would be increased to an alarming degree, for it is fairly sure that farmers would answer the ads of two or three different manufacturers, and perhaps start a price cutting contest between all three for that particular farmer's order.

Once more comes back the answer with increasing emphasis, *co-operation*. Let the association in your state form a central bureau for the promotion of clay products on the farm and tax each member a just amount for its support. Exactly what that amount should be or the method of levying it, we shall not discuss here, but leave this point for a subsequent article.

CHAPTER XII.

The Work of the Promotion Bureau

Obviously, a part of the work of a bureau such as has been suggested in the previous chapter, would be to prepare "display copy"—which means advertisements—and "reader copy"—which means articles playing up clay products—and see that all of them found a place in the journals that reached the greatest number of farmers, with the greatest force and the greatest prestige. That, however, would be but a part of its work.

In the very beginning, it would have to plan the a. b. c. of an educational campaign to reach the farmer. It is a well-established fact that the farmer does *not* think burned clay when he thinks of building. He thinks *wood* or he thinks *concrete*. Why? Pure ignorance!

That is—he does not know as much about burned clay as the man who makes it—he does not know it is better than wood and better than concrete. Now you do know these things—and you want to transfer this knowledge from your mind into the farmer's mind—and that is what the promotion bureau is for.

We all know that the use of clay products in the construction of farm buildings is a comparatively new idea. While the use of burned clay drain tile for draining wet and swampy land has many years behind it, the fact that thorough drainage of any farm will greatly increase its producing power has been utilized by comparatively few farmers, consequently there is nothing like the proper amount of drain tile being used on the farms of the United States. These two subjects—better drainage and the construction of more permanent farm buildings—would make excellent subjects for a comprehensive campaign in every state in the Union.

There is hardly an interest in the United States, commercial, financial or industrial—there is hardly a citizen—who is not interested in seeing the nation's farms produce bigger and better crops. It is the enormous shipments of foodstuffs to Europe just at this time that is keeping the balance of trade in our favor and turning the streams of gold into our coffers. The fact that thorough drainage would greatly increase the producing power of the nation's farms should form an excellent basic argument for agitation and education looking toward better drainage conditions.

There are enormous annual fire losses in farm buildings—in the state of Iowa alone during 1912, four hundred and twenty-eight barns were destroyed by fire, according to the records of the state fire marshal. Because of this fact, and for economic and sanitary reasons, a movement designed

to promote the construction of more permanent farm buildings than are now dotting the countryside, would have sufficient merit to enlist all of the forces that are working for the betterment of the farmer, including the farm journals, the government, state and nation, our agricultural colleges and many other allied interests.

In conducting these educational campaigns, the farm journal would give the greatest assistance. The writer has personal assurance of their co-operation. They will be glad to get well-written, enlightening articles and stories advocating better drainage and more permanent



The Main Office of the International Harvester Company's Agricultural Extension Bureau, From Which May Be Gained Some Idea of the Magnitude of the Bureau's Work.

buildings, and there is hardly a farmer that does not read a farm journal.

An organized bureau—one composed of experts in the art of securing effective publicity—could engineer these campaigns similar to the way bureaus established by other manufacturing interests are doing. It could collect the best kind of material for the articles and stories to be published. Clay products on the farm is so new a field that there are many facts concerning their merit and application to the needs of the farmer that have not as yet been uncovered.

A bureau such as has been mentioned could very easily dig up these facts and use them in its work. For instance, there are, no doubt, a great many uses other than the construction of farm houses, silos, barns, hog houses, chicken houses, etc., to which burned clay could be put.

The bureau could investigate these possibilities and give the benefit of their findings to the farmers of the state in which it is working. But even if it did no pioneering, the service the bureau would render in telling the farmer what the industry already knows about the use of its products on the farm, would far outweigh the comparatively small expense of its upkeep.

Other manufacturing interests which have found a market for their products on the farm, have done much to educate the "country gentleman" in the operation of his farm, and incidently are reaping a vast harvest in the way of increased sales. The cement interests have bound themselves together in one educational bureau which is doing a great work—for cement—in helping the farmer to know more about the uses of cement and concrete.

They are preaching to the farmer "concrete for permanence." What an opportunity there is for the maker of clay products to step in and take advantage of the cumulative effect of the campaigns now being carried on by the cement interests for permanency in farm buildings! The clay products promotion bureau could well afford to work with the cement people in creating a more favorable sentiment for permanent farm buildings, and leave the advertising it carried in the farm journals to swing this sentiment to burned clay.

CHAPTER XIII.

The International Harvester Agricultural Bureau

Imitation may be construed as being flattery. We have spoken several times of the activities of the cement interests and their promotion bureau, and in order that we may not pay them too glowing a compliment, let us turn to a commodity that finds its entire market on the farm and which does not offer any competition to burned clay.

The International Harvester Company has established what is known as its Agricultural Extension Department. The work of this bureau is to educate the farmer and to help him get more and better results from his farm than ever before. While it is a part of the organization of a large farm implement and machinery manufacturing concern, and its existence depends upon the appropriations made by that company for its work, it does not sell farm machinery in the sense that a salesman sells. Its work is to strive for the advancement of the farmer through the introduction of improved farming methods. It operates on the theory that what benefits the farmer, benefits the International Harvester Company, and helps it to sell more machinery.

The South, as you know, is cursed with the evils of what is known as "one crop farming." As an instance of what the International Harvester Service Bureau is doing in the way of educating the southern farmer, it is noted that it recently completed a six weeks' campaign



A Corner in the Bureau's Library. Here May Be Found Exhaustive Data and Information on Subjects Looking Toward the Betterment of the Farmer.

which was directed against this "one crop system" in the state of Arkansas. This campaign included 1,600 meetings which were held in every county of the state and in which 125,000 farmers were reached and taught the advantages of a variation and rotation of crops. The bureau is about to start on a similar campaign in Texas and other southern states.

This work is, of course, considerably in advance of that done by any other manufacturing interest selling to the farmer, and it is hardly necessary to add that the In-

(Continued on page 265.)

The Superintendent

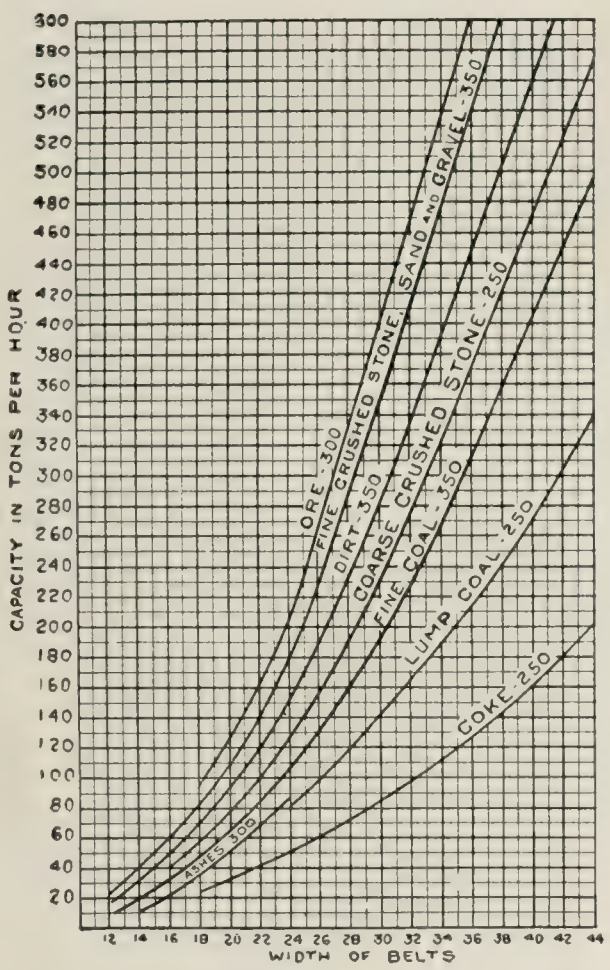
A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

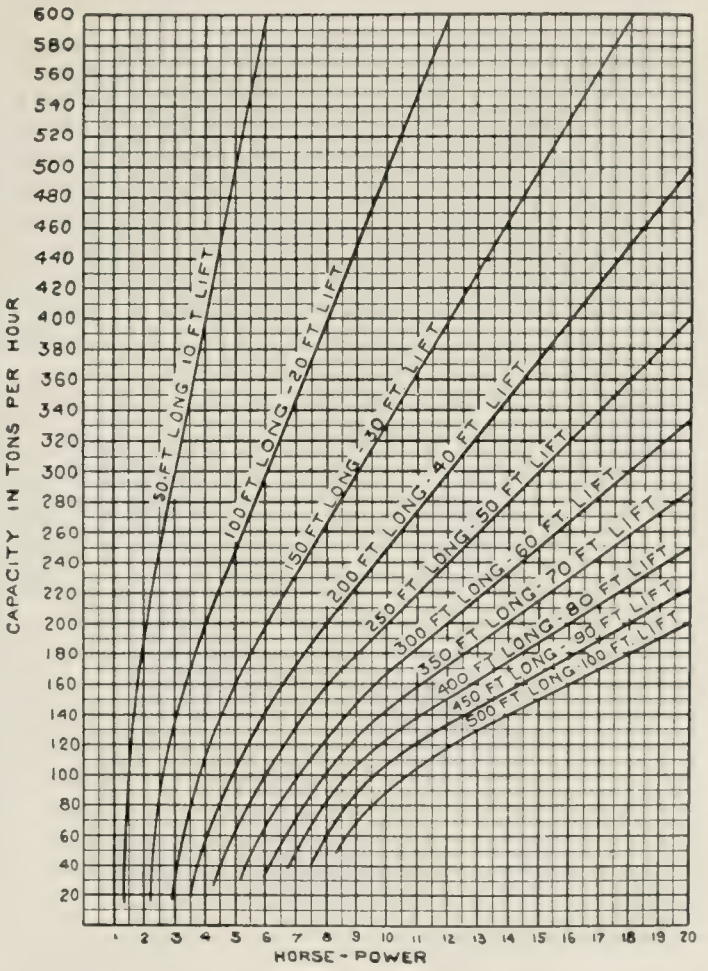
DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Chart for Computing Capacities of Belt Conveyors and Required Horsepowers

With these charts it will be found easy to compute the capacities of belt conveyors and horsepowers for driving them. The first chart shows capacities in tons of material per hour for belts of various widths.

On the curves for the different kinds of material are given the speeds at which it is recommended that the belts be run for carrying the several materials. For carrying crushed stone (or crushed fire-clay or shale) for instance, the recommended speed would be 250 feet per minute, for all belt widths.





In reading these charts, read "crushed stone, shale or fire-clay" where the chart reads "crushed stone."

To find the size of belt necessary to handle any given amount of material, find the quantity in tons per hour at the left side margin of the chart, and follow it horizontally until the curve for the given material is reached; thence directly downward to the bottom of the chart to determine width of belt. Thus—to convey 240 lbs. of crushed stone, fire-clay or shale per hour we find that a 30-in. belt is necessary.

To compute the horsepower to handle this same amount, on a conveyor 250 ft. long, begin at the left margin of the right hand chart, as before, at 240 tons capacity per hour, and follow horizontally until the curve for 250 ft. length is reached, then follow downward, and, at the bottom of this chart, we find 12 h.p. This is for a horizontal conveyor.

Now, if the conveyor is inclined, so as to raise the material, we must increase the power accordingly. The curves in the charts are numbered for lift distances as well as for conveyor lengths. To obtain the horsepower required for the lifting of the materials as above (240 tons per hour), through a height of, say 40 ft., follow as before along the horizontal line 240, until the curve representing the 40 ft. lift is reached; then downward to the bottom scale to find 9½ h.p. as the horsepower required. Thus—12 plus 9½ equals 21½ h.p. It takes practically the same power to convey 250 ft. as it does to raise 50 ft. and for this reason one curve is made to serve for both computations.

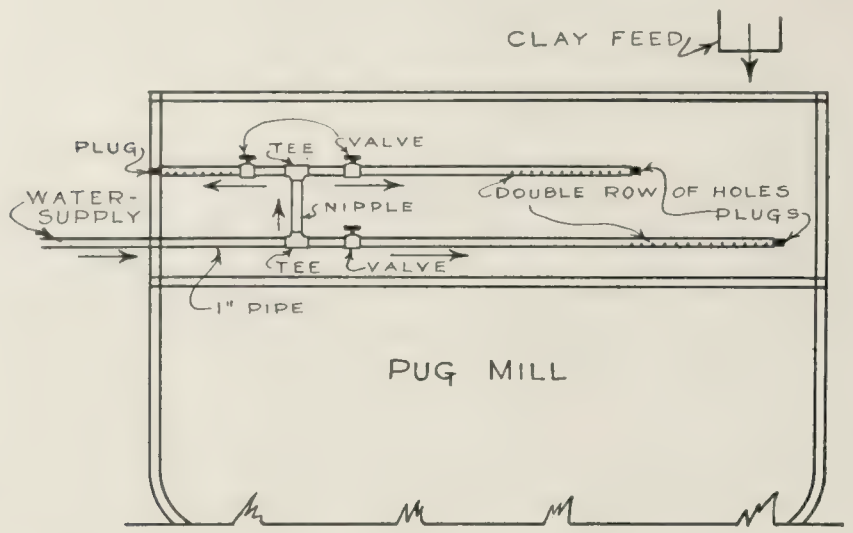
Device for Tempering Clay.

In my experience, in plants where dry pans are used, one of the difficult problems is to keep the clay evenly tempered. It either becomes too stiff or too soft, causes breakage and loss of time, which means lost money to the manufacturer. The man who tempers the clay is usually made to shoulder the blame, although the fault is not altogether his.

If he has a good device for adding the water to the clay, and then allows the clay column to vary, that is another matter, but using the ordinary faucet, and trust-

ing to the "feel" of the clay is not a good way of making uniform ware.

The sketch which accompanies this description illustrates a device that I have used for several years, and with it, a man can learn in a very short time, to keep his clay



evenly tempered. It gives him three chances to get the clay right before it reaches the machine, for if he does not get enough water with the first valve, there is the second and third at his hand. This simple device does away with the high-priced, experienced clay temperer, and it will be found that it lessens the breakage and loss of time much more than you would imagine, considering its simplicity.—E. O. Fogerty, Jackson, Minn.

First Aid Outfits.

Arlington, Mass., now requires that every shop or factory where machinery is used for manufacturing purposes be equipped with a first aid outfit. In that city the board of health has the power to fix requirements of this character and their rule shall have the same standing as do ordinances by city councils, says the Chicago "Tribune"

The rule is as follows: Every person, firm, or corporation operating a factory or shop in which machinery is used for any manufacturing purpose, or for any other purpose except for elevators, or for heating, or hoisting apparatus, shall at all times keep and maintain free of expense to the employes a full set of the following articles, the same to be kept in a suitable dustproof case:

Adhesive plaster, 1-inch roll and 2-inch roll.
Bandages, 2 dozen assorted, sizes 1 to 4 inches.
Absorbent cotton, 1 pound.
Gauze, 1 package of ten yards,
Elastic tourniquet, 24 inches.
Safety pins, 2 dozen.
Splint material, 4 white wood strips, 30x4x3-15.
Scissors, straight, 3-inch blade.
Basin, enamel.
Tablets, corrosive sublimate and citric acid, 100.
Carron oil, 1 quart.
Aromatic spirits of ammonia, 4 ounces.

There are many first aid outfits now on the market. This would be a good one. The New York health department would modify it by omitting the carron oil and specifying that the gauze and cotton should be in small packages.

Carron oil is a poor dressing for burns. It is dirty, it is apt to spread infection; it should be omitted.

The object in specifying that the gauze and cotton be divided among small packages is that the entire amount may not be soiled at the first usage.

In addition to the first aid cabinet, a factory equipment could very well include a few simple remedies. I know of no legislative action requiring this. However, there are laws requiring that certain industries in which the workers are exposed to certain poisons shall carry the antidotes for those poisons in convenient accessible cases.

A medicine chest should include at least the following:
Medicine glass—Two ounces.
Droppers—Two.
Aromatic spirits of ammonia—Four ounces.
Salts—One pound.
Cathartic pills—One hundred.
Vaseline—One dozen boxes.
Laudanum—Two ounces.
Diarrhoea mixtures—Four ounces.
Oil of cloves—One ounce for toothache.
Syrup of ipecac—Two ounces.
Limewater—One quart.
Mustard—One pound.
Bicarbonate of soda—Half pound.

Some Handy Knot Information.

About one man in twenty knows how to tie a knot, sailors and ministers of the gospel being the only known experts in this line. R. C. Hardman of Colorado Springs, Colo., in an article published by the "Engineering News," gives the following description of a rope hitch which he believes has not been previously described in print:

In tying this knot, a bight is taken wherever desired, as shown in figure one, then catching the bight at the points "a" and "b," is turned over, in a direction away from the tier, so that the knot assumes the shape shown in figure two. Another turn is made in the same direction, with figure three as the result. These two turns are made, in practice, in one turn, figure three being nearly a 360 degree turn of the bight in figure one. The line "B" is then placed beside the line "A" and the loops "a"

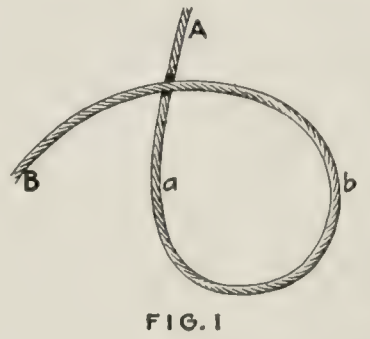


FIG. 1

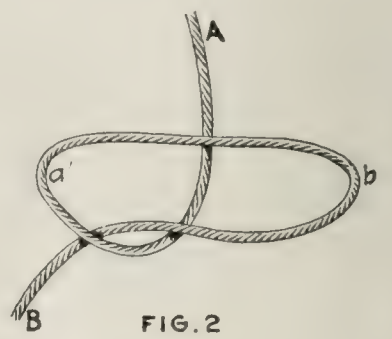


FIG. 2

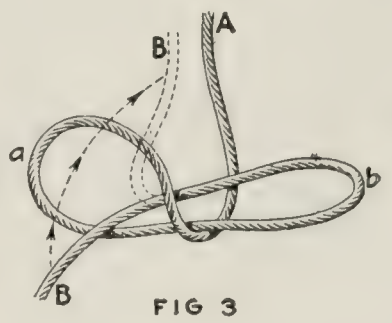


FIG 3



FIG. 4

and "b" are brought together back of the lines "A" and "B."

The hook or other fastening may then be placed in the double loop so made and a strain taken on the line "A." The finished knot is shown in figure four. Care must be taken to have the line "B" beside the line "A" or the knot will not hold.

When the strain is taken off and the hook removed the line falls apart. Its principal use is on a fall line or any line to which power is applied in case a temporary pull is desired at any point other than that at which power is usually applied. It may also be used in various other cases which will be obvious after the knot is known.

Questions and Answers

Here Are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

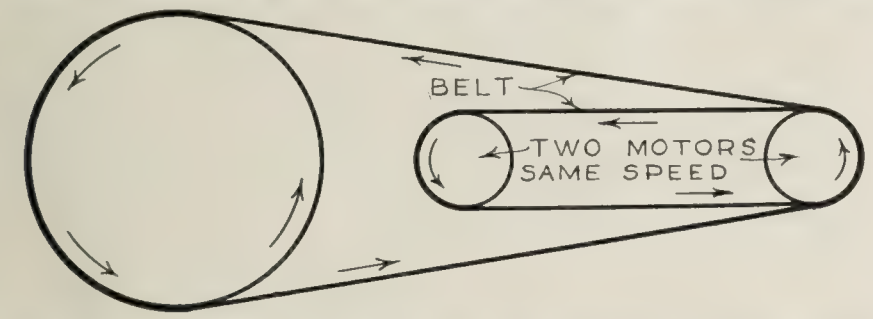
QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Will Motor Loads on Same Shaft Vary?

617. *North Dakota—If two motors having the same speed and same size pulleys should be connected up to drive a machine as shown in the accompanying sketch, will there be any difference in the load of the motors provided there is absolutely no slippage in the belts, or will motor pulleys have to be slightly different in diameter as in the ordinary tandem drive to give motors an equal load?*

Provided the two motors in question have the same general characteristics, the same capacity and speeds, the load would divide equally between them. The pulleys to do this would have to be of the same size.

If two motors of different horsepower rating are used, the tendency would be to put a slightly greater load on the large motor, assuming that the speeds were the same. The reason for this is due to the fact that the variation in speed from no load to full load is slightly less on a large motor than it is on a small motor, as motors are commercially made.



This variation could probably be overcome by placing the large motor inside, that is, between the motor with two belts and the driving shaft, and vary the load on this slightly by belt adjustment.

Motors of different capacities with exactly the same characteristics would divide the load in proportion to the ratings of the motor when all question of belt slippage is eliminated. In other words, for a thirty horsepower load using a twenty and ten horsepower motor, each motor would be running at full load, or practically so.

Burning Lignite in Down Draft Kilns.

633. *West Virginia—I have a brick plant proposition under way where it will be economical to use lignite coal. Will you give me what information you have regarding the practicability of using lignite coal in burning brick, especially in down-draft kilns?*

This is an important question—important because fifty per cent of the balance of our coal supply is lignite. Here is a material which, generally speaking, is considered a low grade fuel; within it a great tonnage of immense commercial value lies dormant. Lignite runs low in carbon or heat producing constituents, high in volatile matter, high in moisture. In the volatile matter we find a commercial product that has many times the value of the carbon that is missing. In all direct firing of lignite we must make allowances for the loss of the heat which is used in evaporating the free moisture, and any attempt to use raw lignite in ordinary direct firing cannot help but result in low efficiency. Since, however, our questioner may be compelled to follow the old methods of firing, we will endeavor to show, as accurately as is possible, the construction of a fire-box for lignite and compare it with the fire-box that is often used to burn bituminous coal.

For example, using a 12,000 B.T.U. bituminous coal and 8,000 B.T.U. lignite—in the former, with a certain draft, we would consume to an ash approximately 10 lb. of coal per sq. ft. and, at 100% efficiency, in a 6′ 0″ grate, or 3 sq. ft. of grate area, we would liberate 720,000 B.T.U. (6×10×12,000) per fire box per hour, or, for a twelve fire box kiln, 8,640,000 B.T.U. per hour, to obtain the required temperature. To produce the same results with lignite, we would increase the grate area so as to consume that quantity of lignite which would be required to produce the same quantity of heat per hour, or 720,000+8,000+10=9 sq. ft., instead of 6.

Provision should also be made for the proper air supply and for equal distribution over the greater grate area, and also it will add greatly to the efficiency if this air is superheated and supplied by blast. Every brick yard has an abundant supply of waste heat so that simple and effective means could be provided for supplying superheated air for all combustion and the result produced would pay for the extra expense in a very short time.

It would be well for all who contemplate the use of lignite in direct firing, and especially those not familiar with its use, to correspond with Mr. Russell, manager of the Dickenson Fire & Pressed Brick Company, of Dickenson, N. Dak. Mr. Russell has had years of practical experience with lignite in the burning of common-brick and fire-clay products, is a technical man and should furnish valuable practical information. We cannot help but believe, however, that all present methods, which consume the total quantity of raw or bituminous coal with such tremendous loss, are entirely wrong and not in keeping with well established scientific methods.

All of our lignite coal fields are found in the far West and Northwest, where other fuel is scarce and high priced, due to the long freight haul. If the most economical methods are sought, then the best results up to date can be had by adopting or erecting a lignite carbonization plant similar to the one operating at Minot, N. Dak., in which it requires about two-and-one-eighth tons of raw lignite carbonized to make one ton of high carbon briquettes. The briquetted carbon will practically have the same heating value as anthracite and commands about the same price, and about $1.50 to $2.00 net per ton of briquette can be made in the process, while letting all of the gas escape to the atmosphere.

The process will produce from 12,000 to 15,000 ft. of 400

(Continued on page 266.)

Distributing Plans of Panama Pacific House

The work of distributing quarter scale plans and printed specifications of the Panama-Pacific model residence has begun. As fast as preparations can be made, a full set of these plans will be sent to every subscriber to the Association's funds, who expresses a willingness to receive the plans and specifications and secure a bid upon them within a given time.

Arrangements will be made so that any subscriber to the fund may secure more than one set of plans and specifications by application to the secretary and this will allow for competitive bids in case it is thought necessary to have them.

Although it is reasonable to believe that the majority of "Brick and Clay Record's" readers understand the object of this plan distribution, it will be repeated here. Much has been said in the past regarding the impression that has been created among prospective builders in relation to the high cost of building in brick.

Manufacturers of building brick have made statements in this connection but it has been very hard to give proofs. It has also been next to impossible to give publicity to such proofs as had been acquired.

The plan outlined by the Panama-Pacific Clay Products Association will give proofs and give publicity. The only thing that will stand in the way of this will be the question of brick manufacturers and dealers failing to grasp the opportunity which is offered them.

"Failing to grasp the opportunity" means the receiving of these plans and waiting for "sometime" before giving them to the contractor or—something which is just as bad—letting the contractor take them and then "taking his own time" about sending in his bid.

Briefly, the manner of handling this proposition is as follows: select some reputable contractor whose signature attached to a bid will be binding. Select some man who has been building with brick, if possible, and who understands the cost of good brick work. Impress upon him the fact that if he makes a bid upon this house, it must be made in exact accordance with the plans and specifications and that he must be ready to build a house for that amount of money if any responsible property owner comes to him at any time during 1915 and asks him to build a house within the limits of the city or town in which he is operating.

Allowance will be made, of course, for grading and excavating, as these are things that cannot be determined in advance.

American Ceramic Society Plans Good Meeting

The seventeenth annual meeting of the American Ceramic Society, which will take place at Detroit, Mich., beginning Monday morning, February 15, and extending through Thursday, the 18th, promises to be of its usual excellence.

The first three days of the meeting will be given over to the reading and discussion of the various papers, and also for the transaction of necessary business. Thursday will be an "All-Day Excursion," in which the convention party will leave the Tuller Hotel, the headquarters for the meetings, in automobiles and visit a number of local clayworking plants.

It is not decided as yet just what will be the feature of Tuesday evening's program, this time being available for a banquet, adjourned session or committee work. It is probable that both a banquet and a smoker will be available. This opportunity of gathering together in an informal way and exchanging experiences and ideas is one of the most enjoyable parts of the program and is usually well supported.

The convention headquarters, as stated above, will be in the Tuller Hotel, and the secretary urges upon each delegate the advisability of making an early reservation.

Will Ask Legislature for Research Fund.

At the first annual meeting of the New Jersey Clay Workers' Association held at Rutgers College, New Brunswick, N. J., December 28th and 29th, a resolution was adopted requesting the state legislature to provide annually $10,000 for research work by the Department of Ceramics at Rutgers College, for the benefit of the clayworking industry.

The meetings of the convention were very largely attended by representatives of all branches of the industry within the state and many from nearby states. The program which had been provided was of exceptional merit and the topics were such as to relate to several of the branches of the industry.

The temporary organization which was effected last June was made permanent by the adoption of a constitution and by-laws and election of officers. The officers who had served during the period of organization were elected for the ensuing year, namely: President, Chas. A. Bloomfield, Metuchen, N. J.; vice-president, John Maddock, Trenton, N. J.; secretary-treasurer, Cullen W. Parmelee, New Brunswick, N. J.

Following a suggestion made upon the reading of an excellent paper on saggars, the appointment of a committee was authorized to consider the question of undertaking co-operatively a study of the saggar problem.

"Build with Brick" Metal Signs.

A splendid opportunity awaits the progressive brickmaker to capitalize the enthusiasm and interest that is being created by the "Build Now" movement which has gained a foothold in the East, by tacking up "Build with Brick" signs. In Chicago, the Middle West and elsewhere, manufacturers and dealers of building materials are conducting a campaign of publicity in which the unusual low price of labor and material is used to urge the prospective builder to "Build Now."

Why not join with the other forces that are advising immediate building, but add the advice "Build with Brick." Now is the time, when the prospective builder is laying out his plans and deciding upon the kind of material to use, to reach him with your message "Build with Brick."

And the most forceful and inexpensive way of doing this is to buy some sheet steel blue and white signs reading "Build with Brick," which are sold for six cents each, or "Build with Brick" and your name or the name of your company following, on which an additional imprinting charge of $1.25 for the first hundred signs is made.

As these signs are manufactured in large quantities to secure the low price, "Brick and Clay Record" is holding a number of orders. These orders will go to the factory on February 10, and if you desire to secure some of these signs for immediate use, send in your order at once. You will then have the advantage of being able to secure your signs within a week or ten days and so not have to wait. Mail your order today.

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Suggests Registration of Tiled Farm Lands.

John W. Anderson, Jr., president of the Woodland Clay Company, of Watseka, Ill., opens a new subject in advocating the registration of tiled farm lands. In a letter dated January 25, he writes:

I have followed, with a great deal of interest, your articles on "Reaching the Farmer" and note, in the January 19 issue, the closing paragraph reads, "In the next article I will have something to say about the value of a central publicity burea."

Publicity is what the industry needs, in every branch. But, since you have laid stress on its being handled through a "bureau"—by which I presume you mean a well equipped office, with competent, well-paid experts at work, I believe that its work might well go beyond mere publicity, and become constructive.

One phase of this constructive work should be the securing of legislation that would result in the enactment of laws that would provide special means for the recording, in the offices of the county recorders of deeds, maps that would show private drainage installations in detail. Such a law need not make the filing of a drainage plat compulsory, but simply provide a means for so doing that would make the maps filed authentic.

These maps could show the size and location of the drains, the kind of tile used—whether made from clay or other material—the fall, depth and date of installation, with such other data as may be valuable.

The maps should be prepared and their correctness certified by a competent surveyor or engineer, under oath, with a suitable penalty for falsifying records with intent to defraud.

Means should be provided also for recording competent surveys of drains now in service. A uniform scale for these maps should be provided, and, with a blueprint, there should be filed a certified tracing to facilitate abstracting.

To one familiar with the conditions, the benefits to be derived from such a system are obvious. The plan strongly appeals to those farmers who have purchased tracts represented indefinitely but convincingly as "thoroughly drained," only to find later but a few poorly located and entirely inadequate drains in service. In selling a farm, access to a convenient public record showing the nature and extent of the drainage improvements would prove a material help.

Banks, insurance companies and others loaning money on farming land will be given a reliable basis for appraisal of the invisible but very important drainage improvement. Thus the value of the land and the landlords' credit will be enhanced, and the tendency will be toward lower interest rates on farm loans.

Anything that makes the farmer's credit better—that helps him to raise money as he needs it, without having to pay a high rate of interest—will be welcomed by the farmer. Legislators are anxious to cater to the "farmers' vote" and a measure of this kind will find ready support in the various state capitols.

It has been suggested that the system will tend to promote a practice of making special loans for proposed drainage improvements, the money to be advanced as properly authenticated maps are recorded—these maps showing the progress of the work—somewhat as buildings and other improvements are now financed.

The plan also promises valuable aid to state and national agricultural departments, by providing accurate data as a basis for comparative statistics, and will no doubt be welcomed as a means for broadening the scope of their service.

If a general discussion brings to light no serious obstacles—and the writer's somewhat extended investigations have disclosed none—co-operation of the active farmers', bankers' and other organizations interested in farm welfare should shortly bring about the enactment of the legislation necessary to bring the plan into active operation.

The writer will gladly render all possible assistance.

"Brick and Clay Record" invites written criticism of this plan. On its face it seems to be of great importance to the manufacturers of clay drain tile, as well as being in line with the educational work that is being advocated by this magazine, in order that clayworkers may "Reach the Farmer."

More About Syndicated Sales Letters

It would appear that the letter written by Frank A. Bolduan, of Bruno, Sask., which was published in the Jan. 19 issue, had stirred up some activity. Another letter, under date of Jan. 25, has reached us, and in it, Mr. Bolduan writes:

Thank you for publishing my January 11 letter. It was convincing proof that, when a clayworker submits something of value and of genuine interest, it promptly finds its way into your columns—in short, you are ever on the alert for "live wire ideas." If more of your readers would take advantage of this department, the chances are that a great deal of valuable thought would be brought to light in this "melting pot"—your Letter Box. "Brick and Clay Record" has doubled up, in the past year, in "mental props"—real suggestions that mean money to the man who adopts them.

As to my proposition, I have received quite a few enthusiastic letters from manufacturers of building materials, promising their support to any co-operative movement that will be aggressive and progressive in its manner of "boosting" clay products. All of them voice the need of a service that promises expert service without requiring expert pay. The "syndicate" idea appeals to them. They acknowledge the need of strong selling letters. They admit that no one connected with their offices knows how to write a selling argument.

I expect to open an office in Chicago and will have the first "exhibits" ready in a few days. I feel sure that you will, when you see these first letters, written by a clayworker, yet with the "punch" and "pep" and "ginger" of a high-priced ad. writer, you will agree that I am the only and original "long felt want." I hope, too, to be able to show you a strong article on "Doing a Mail Order Business in Clayware" that will say three or four brand new things.

In addition to the letters that Mr. Bolduan has received, others await his coming to "Brick and Clay

Record's" editorial offices. Here we, and they, await his coming—they placidly, we with interest. We think Mr. Bolduan has a great little idea. If it pans out in the first "exhibit" it ought to be, as he says—"the only and original long-felt want."

Wants Information About Clay Silos

A. O. Harris, proprietor of "The Model Farms" at Harris, Mo., writes us under date of January 23, asking some questions about clay silos. He has been through a fire and has learned the lesson that fire always teaches, relative to "frame versus clay." His letter follows:

On the 14th of the present month we had a serious fire, through which we lost our cattle barn and its entire contents. We were successful in saving the majority of our valuable stock, but sixty head of cattle were burned, giving us a loss of approximately $50,000.

A part of this loss was two stave silos that burned and this has embarrassed us somewhat because we have no way of taking care of our silage.

Now we are interesting ourselves in clay silos and are writing you to know what you consider the best type and the best manner of building. We thought that possibly you could put us into communication with some of your subscribers who have developed the clay silo business and who would be in a position to take contracts for supplying both labor and material.

Have any books been published on the subject of clay silos and is there any way that we can get authoritative advice as to the best type and the most approved manner of building?

The manufacturers of curved hollow-tile silo blocks have splendid arguments in favor of that form of burned clay for the purpose noted. Last year, an inquiry similar to the above was received, and answered through this magazine. The answer brought forth a letter from W. G. D. Orr, general manager of the Purington Paving Brick Company, of Galesburg, Ill., in which the claims of paving brick, used for this purpose, were set forth in a most convincing manner. Recently another letter has come to us, from Professor J. B. Davidson, who is in charge of the Agricultural Engineering Department of the Iowa State University, at Ames, Iowa, which is highly interesting and instructive. Without attempting to discuss the relative merits of hollow silo-block and of paving brick, we print Professor Davidson's letter, believing it gives an angle to the clay silo business that is worthy of considerable thought. Professor Davidson's letter is dated January 23, and reads:

"We believe that these brick would make a very satisfactory silo, with the possible exception that the wall might be a little too rough on the inside to permit the silage settling freely. This could be overcome by giving the silo a plaster coat on the inside.

"We wish to condemn, however, in the strongest way, the practice of building silos without reinforcement. People who build such silos are placing the development and extensive use of their material in jeopardy. Perhaps the strongest influence against the further use of clay blocks in silo construction in Iowa, has been the fact that a few of these silos have split or burst. They would not have done this if they had been properly reinforced. As it now stands, the entire silo is discredited by some. Furthermore, there can be no valid reason why reinforcement should be left out. The item of expense is small, and although some silos do stand without reinforcement, all silos should be reinforced to provide a reasonable factor of safety.

"Brick have been used quite extensively in certain parts of Wisconsin for silos. The Christensen silo is one type which was developed there several years ago.

"We do not believe that freezing in a brick silo would be a serious matter, even if the wall was made solid. A double wall, however, ought to be about as warm as any type to be found in use."

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

IF the custom of rotation is followed out at the coming general conference of the Interstate Commerce Commission, Charles C. McCord will be elected chairman of that body, succeeding James S. Harlan. Mr. McCord was appointed to the Commission in 1910.

Since our last issue, the following items of interest to the industry have taken place before the Commission:

A complaint has been filed by the Duffney Brick Company, the Mechanicsville Building Brick Company and the Troy Brick Company, against several railroads. It is set forth in the joint complaint that from January 29, 1904, until November 1, 1908, a rate of $1.80 per thousand brick was in use, from Lansingburg and Mechanicsville, N. Y., to Worcester, Cambridge and Boston, Mass., which rate was equal to ninety cents per ton. On September 5, 1914, the complaint continues, a higher rate was put into effect to and from said points, forcing the Mechanicsville and Troy plants to close and the Duffney plant to greatly reduce its output.

The Fort Dodge Brick and Tile Company, Fort Dodge, Iowa, has also entered a complaint, against the Chicago Great Western Railroad Company, et al. It complains of

(Continued on page 282.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

IN THE NOVEMBER 3 issue of "Brick and Clay Record" was published some pictures together with a description of a practical and inexpensive clay-digging machine, invented by J. W. Bailey, superintendent of the South Carolina Clay Company, Langley, S. C. Two of these machines are steadily at work in the Langley clay mines.

For the installation of this clay gathering system, the H. C. Tennent Supply Company, Augusta, Ga., supplied Broderick and Bascom wire rope. They have the contract for all the wire rope at these mines.

It costs about $2,500 to manufacture this clay-digger. And then this is what it is doing:

It works on top of the clay, or can dig clay at a depth of ten or twelve feet; fill cars on top of the bank — and then "clean up" the field of clay as it is worked.



The dipper, after receiving its load, is immediately suspended on the carrier lines, from which it can be dumped at the will of the operator, anywhere.

One of the machines now at work at the Langley clay mines has a one-and-one-half-yard scraper bucket, the other a two-yard bucket; both being operated by an ordinary hoist engine.

It is claimed that this machine can work satisfactorily in a very wet pit; the water will not interfere.

It is understood that Mr. Bailey has tried almost all brands of wire ropes during his professional experience. And now he indicates clearly his belief as to which is most dependable and most economical; for the machines he operates have 1,150 feet of 7/8-inch 6x19 Yellow Strand Powersteel carrier lines; 525 feet 3/4-inch 6x19 haulage lines, and 1,100 feet 5/8-inch haul-back lines. Other B. & B. wire ropes in use are two 250-foot 1/4-inch 6x19 galvanized steel anchor lines; eight 150-foot 3/4-inch 6x7 galvanized steel guy lines, and three 400-foot 3/4-inch 6x19 galvanized steel tail lines.

Mr. Bailey recently ordered from the H. C. Tennent Supply Company a 7/8-inch Patent Steel, and a 3/4-inch Yellow Strand Powersteel rope; 1,125 feet in all, a further proof of his belief in the dependence of B. & B. wire rope.

Fallacy of Cheap Grate Bars

It is surprising that the trade persistently demands cheap grate bars. One would think that those able to appreciate the necessity for good material and workmanship in castings for high duty pumps, locomotive cylinders and the like, would see the need for such qualities in their grate bars. Nevertheless, when the importance of good grate bars is urged the usual response is: "Why they're only grate bars! What's the use—the fire will only burn them up, anyway." It is the old weakness for substituting "something just as good."

The idea seems to be that when a grate bar burns out any old thing will do just so it will hang together. If the fire is kept from falling out, no attention need be paid to the reduced draft area and the restricted combustion.

Rough appearance and absence of both machine finish and paint deceive the user into thinking that any kind of iron will do to make a grate bar. A superfine quality of foundry iron is not urged, although there are many places where such material is none too good. The iron should be sound, well knit and homogeneous. The long service this kind of bar will give amply repays the extra cost. It is almost criminal to spoil a well designed firing chamber by the use of inferior grate bars when it is so essential that they be properly designed and proportioned.

The bulk of the grate bar business is in the hands of the small country foundries, which make them of scrap agricultural machinery castings, hard as flint and full of dirt. The fact seems to pass unnoticed that the openings become filled up—that they soon crack and burn, and that their closed vents call for harder firing and more coal.

Flagrant disregard for economy in the operation of the plant causes us to wonder why, in this age of efficiency, so many men persist in standing in their own light in the important matter of grate bars.

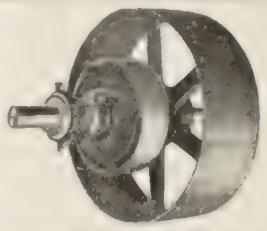
A clean fire at all parts of the grate is always desirable to get the highest efficiency out of the coal burned. Unconsumed gas (or carbon monoxide, the product of incomplete combustion) can easily be avoided by the use of

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.



Dodge Line means "Everything for the Mechanical Transmission of Power." The most efficient and economical method possible. DODGE MANUFACTURING COMPANY,
Works: Mishawaka, Ind. Branches Everywhere

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff Strongest and most durable

Manufactured by

C. K. WILLIAMS & CO., EASTON, PA., U.S.A.

Correspondence solicited

H. M. DEAVITT, *Ceramic Chemist*

209 South LaSalle Street, Chicago

Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

Our business is diagnosing and remedying

TROUBLES

of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult

H. & B. COPPING, Kankakee, Illinois

We personaliy do the work.

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

Mr. Brickmaker:

How do you dry your brick—by open air or artificial means?
Which method is best—costs least—saves the most heat?
Write for full information on drying systems. No obligation.

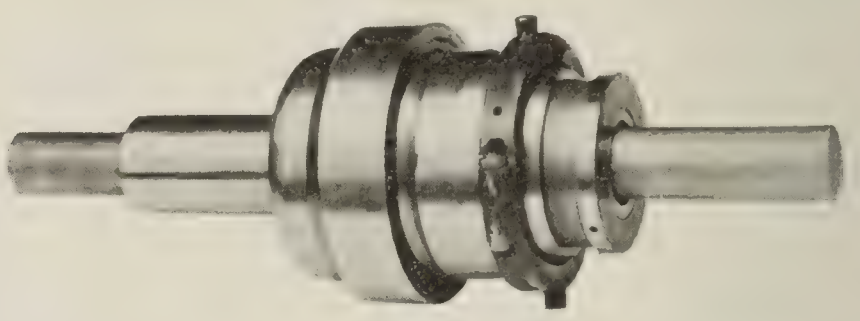
B. F. STURTEVANT CO.

Hyde Park, Boston, Massachusetts, and all principal cities of the world.

a properly constructed grate which will keep the fire clean and the grate bar spaces open at all times.—Marion Machine, Foundry and Supply Co.'s Catalog "Efficiency."

Dodge Safety Self-Oiling Clutch.

After much careful and exhaustive experimental work, the engineers of the Dodge Manufacturing Company, Mishawaka, Ind., have originated and developed an improved solid multiple disc friction clutch, which retains all the good points of the present Dodge clutch with the



addition of the important features of safety, efficiency and durability.

All moving parts of the mechanism of this new clutch are concealed, making a perfectly smooth contour. There are no projecting moving parts to catch clothing or injure workmen; no cumbersome or unsightly guards or screens are necessary.

The design and materials of the multiple friction discs, combined with the new roller toggle operating mechanism, make this the most powerful clutch of its size that has yet come under the observation of mechanical experts.

The rolls on the toggle levers travel on conical surfaces arranged to give high pressure on the friction discs with a minimum amount of mechanism friction. The use of rollers in place of sliding parts makes the clutch easily operated. The action of centrifugal force tends to keep the clutch disengaged when thrown out.

The clutch is self-lubricating. An oil ring revolving in a large chamber or oil reservoir, carries a continuous supply of oil which is circulated through suitable grooves to all parts of the sleeve carrying the pulley. This chamber is sealed to prevent oil working out into the mechanism. The shifter ring for engaging the clutch is made with a channel section, which retains oil and assures positive lubrication at this point at all times.

The clutch is easily adjusted with a single nut adjustment which is simple and positive. Backing off this nut permits removal of the operating cone which exposes the toggle mechanism and also permits the removal of the entire inside mechanism for repairs. The best materials are used throughout. It takes little space on the shaft, less attention in operation, has a good appearance and is considered a worthy addition to the Dodge line of power transmission machinery.

The clutch may be easily applied to stationary or portable tools or countershafts, as well as pulleys, gears, sprockets, etc., and is especially suited to high speeds. It is not only safe in its design and construction, but presents a most effective means for the prevention of accidents and injuries to workmen by giving absolute control of the power between the shafting and the machines.

New Link-Belt Data Book on Silent Chain Drives

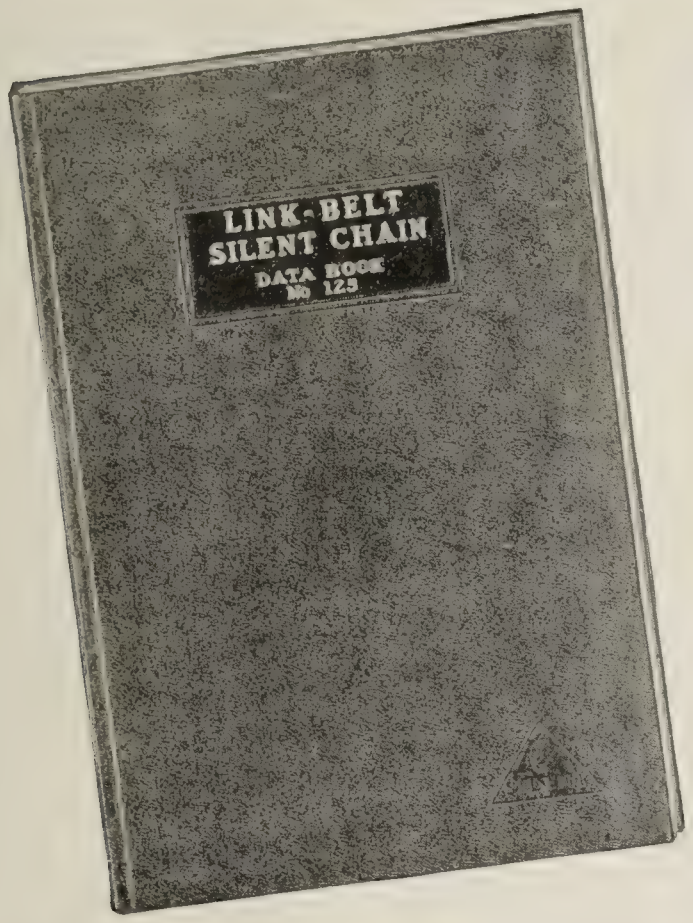
For the first time in history, an engineering data book has been published by a manufacturing concern which will enable users of power to select the correct silent

chain drives for their work and determine exact costs from prices shown in the book.

Besides giving complete engineering information on silent chain driving in simple and compact form, "Data Book No. 125" describes many uses of silent chain for the efficient transmission of power and gives specific reasons and illustrations showing application in a large variety of uses.

Link-Belt silent chain is a series of links connected by joints which consist of segmental case-hardened bushings and case-hardened steel pins. The chain is as flexible as a leather belt—as positive as a gear. Its rated efficiency is 98.2 per cent on actual test. It will transmit any amount of power, quietly. Over 200,000 installations, we understand, were drawn upon for the information contained in this data book.

The book is the only work of its kind and consists of



112 pages, bound in flexible red cover. Copies can be obtained free of charge by addressing the manufacturers, Link-Belt Company, Thirty-ninth Street and Stewart Avenue, Chicago.

Questions and Answers

Under this heading, and in the Machinery and Equipment pages, we inaugurated, with the January 19 issue, a service that we believe is of great value to our readers and to our advertisers. It is to cover the questions that reach us every once in a while, which we cannot answer specifically without favoring one advertiser more than another.

It has been our custom in the past, to refer the questioner to our advertising pages and, when we could do so, send his name and wants to our advertising list, in the form of a bulletin.

Many cases have come up, however, when, in asking this kind of advice or information, the writer of the letter has asked that we do not publish his name—intimating that, while he is interested, he is not ready to buy. This new service helps to bridge the chasm.

So, if you are an advertiser in "Brick and Clay Record"

Increased Efficiency *Greater Economy*

Results obtained from use of

"Fuller Quality"

Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

"The Tanks with a Reputation"



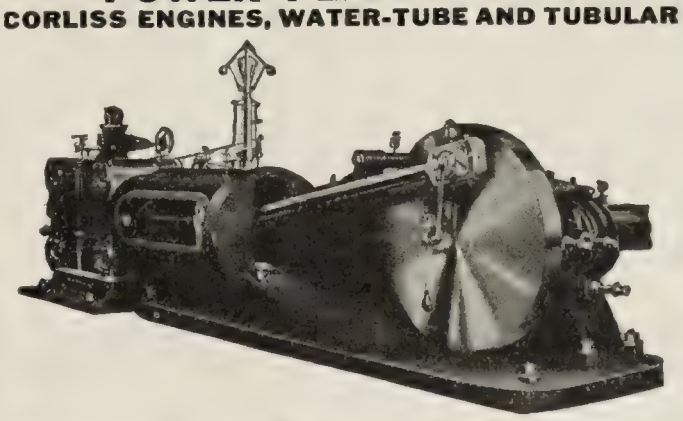
Hoop Lugs made by **Caldwell**

will never slip or give way. They are the only "positive grip" lugs on the market. This lug does not depend on friction to hold it, as other lugs do.
Our catalogue of Tanks and Hoop Lugs, contains illustrations giving full details. Let us send you a copy and make you prices.
We can ship promptly.

W. E. CALDWELL CO., Inc. Louisville, Ky.

Tanks (*Steel-Wood*) **Towers** (*Galvanized*)
Wind Mills—Pumps—Gas Engines

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 **BURLINGTON, IOWA**

"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel Rails and Accessories

Offices: Steubenville, Ohio
Mills: Newark, Ohio

BUCKEYE MEANS BEST — BEST MEANS BUCKEYE

All Sections from 12 lb. to 40 lb. per yard

Write or wire us, when in need.

No order too large to handle promptly or too small to secure immediate attention.

Pyrometer Insurance



You insure your plant against loss by fire. Why not insure your brick against loss through incorrect pyrometer readings. THE STUPAKOFF STANDARD LE CHATELIER PYROMETER. Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories Pittsburgh, Pa.

300 lbs. of slack coal per 1,000 brick

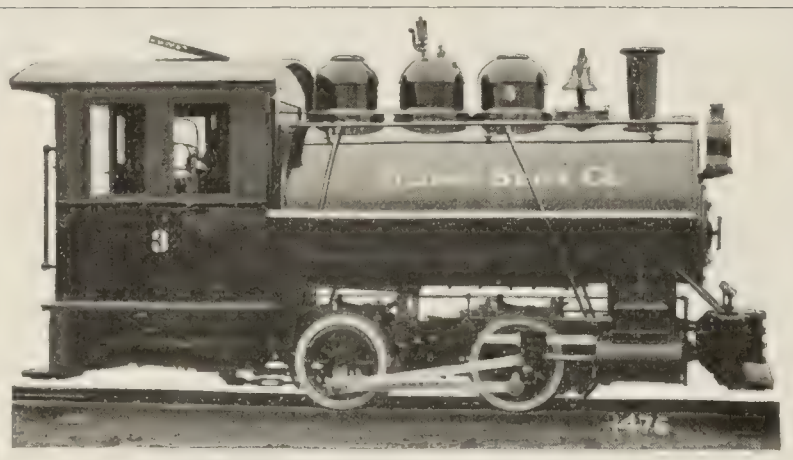
are usually required in

THE KLOSE KILN

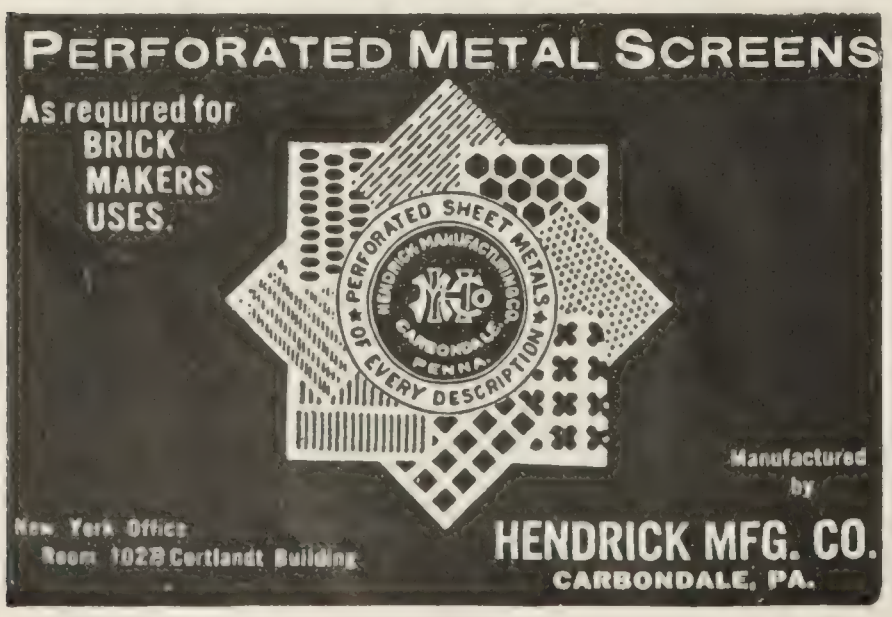
Cheap in construction and economical in operation. Adapted for small and large capacities.

Write for particulars and references

K. W. KLOSE, 4239 Benton Blvd., Kansas City, Mo.



Davenport Locomotive Works,
Davenport, Iowa



and will write to these questioners, or such of them as ask questions that your letters will answer, and will direct your letters to the key number—as, for instance—"No. 5, Kentucky"—in care of "Brick and Clay Record," your letters and printed matter will be forwarded promptly.

Be careful, though, that your envelopes bear your firm imprint—otherwise they will not be forwarded. This service is to bring "Brick and Clay Record" readers and "Brick and Clay Record" advertisers together—not to do favors for the whole wide world.

3. Maryland—Will you kindly tell us something of what you know about oil for burning brick? Do you know of any concerns using oil for fuel? We know that some of the Chicago brick yards use oil, but we would like to learn of the location of some plant in or near Maryland that we could visit and so receive some practical knowledge in the use of this kind of fuel for the purpose noted.

4. Connecticut—We are planning to burn our brick the coming year with heavy Texas fuel oil and would like you to give us or get for us the following information from those who are now using this grade of oil in scove kilns under air pressure for atomizing requirements, to be placed on a 25 arch kiln of about 30,000 per arch of common red building brick made by soft-mud process. First: the size and capacity of storage tank which will hold sufficient oil to burn one kiln; the kind of air blower, the amount of air pressure at burner nozzle and volume of air required per minute to supply fifty burners, oil pressure at burner, size of air pipe from blower along each side of kiln and the most economical make of burner.

5. Kentucky—We are thinking of installing the necessary machinery for making hollow clay blocks for silos and we would like to get some information as to the cost of manufacturing the blocks per thousand and what they retail for per thousand.

Will Make Commercial Tests of Clay

The testing of clay, in order that a fair judgment may be given as to its commercial value, includes many things beside laboratory tests. One of these is an inspection of the deposit itself, and another is the testing of the material, as taken from several points in that deposit, and the burning of them, separately and together. This is the kind of testing that is done by H. W. Deavitt, a graduate of the Massachusetts Institute of Technology and a ceramic chemist of note. With an office conveniently located in Chicago (209 South La Salle Street), he is in a position to make hurried trips to points where a study of the location, depth and extent of the deposit is in question. At the same time, he is within quick mail and express distance of the larger clayworking fields of the country. An and in the practical direction of plants, where technical knowledge has solved manufacturing problems, makes Mr. Deavitt especially well fitted to care for the wants of clayworkers.

International Bureau Considers Publicity

Members of the International Clay Products Bureau met at the Congress Hotel, Chicago, on Tuesday, January 19, for the purpose of studying the situation looking toward a campaign of publicity in favor of flue lining.

George H. Tefft, of the W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., who is secretary and treasurer of the bureau, explained that the reports of various state fire marshals in discussing the uninspected risks—residences—show that of known causes of conflagrations, lightning comes first, defective flues second, and sparks from flues on shingle roofs, third. These facts indicate that if proper flues were installed in chimneys, the fire hazard of today would be greatly eliminated, inasmuch as defective flues and sparks from flues cause more fires than any one other agent.

Reaching the Farmer

(Continued from page 254.)

ternational Harvester Company is reaping a reward, the richness of which is far above the investment that is being put into this work.

The accompanying illustrations show the main part of the bureau's office in Chicago. We cannot help, in looking over its equipment, its large force of trained workers and the good it is accomplishing, but marvel at the farsightedness and broadness of the mind or minds that conceived the idea of establishing this bureau. At the same time, we must admit that it is producing wonderful results.

The sooner the clayworking industry catches the spirit in which this educational work was started and is being carried on, the sooner it will have solved many of its problems of curtailed demand and low prices.

There are, no doubt, many manufacturers of drain tile, silo block, hollow tile and brick who do not believe that advertising and publicity is necessary to help them in selling their wares to the farmer. We can only think of one instance in which this might be true—the man who is satisfied in being just as small as is humanly possible; who would rather fight his brother worker-in-clay with antiquated selling methods in supplying the need of old customers, than to go out and conquer virgin soil in the vast host of American farmers who have never heard of a silo block.

Rather let us assume the attitude of a drain tile producer who said recently, "I know practically nothing about advertising. Some of your gentlemen (pointing to other members of his state association) know a great deal more about it than I do. *But I know this*—among my 'fat' seasons in the drain tile business, I have many 'lean ones.' If advertising and publicity to reach the farmer will give me more 'fat' seasons, then I am for it."

The promotion of clay products on the farm will bring more "fat" seasons. This is not merely an assertion. Have we not pointed out time and again what it has done for other industries? Is the clayworking industry so different from other manufacturing lines that it will not respond to printers' ink?

We must not be discouraged by the task before us in establishing promotion bureaus for burned clay throughout the nation. This work cannot be done in a day nor a week nor a year. The Agricultural Extension Bureau of the International Harvester Company did not begin with its present size. It had a small beginning and grew until it reached large proportions. Any bureau established for the promotion of clay products on the farm must naturally start small. But it will grow, and with its growth will come a corresponding expansion on the part of its members' business and of the industry.

In the next article of this series, the question of forcible advertising for drain tile will be taken up, and some suggestions made as to the proper handling of "display copy"—which is paid advertising.

In the February 16 Issue

Further details of the N. B. M. A. Convention will be given.

In the March 2 Issue

A Full Account of "What Happened at Detroit" will enlighten the Stay-at-Homes.



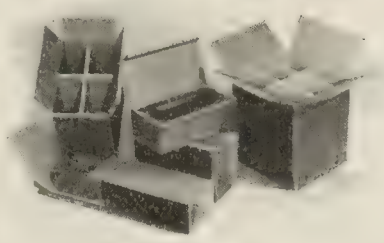
What L. D. George, Penola, Va., says about Cling Surface:

"I was the pioneer user of Cling-Surface in this community, have not been without it for fifteen years, and expect to use it as long as we have belts. We induced many neighbors to try it by giving or loaning them a few pounds. In each instance they became constant users."

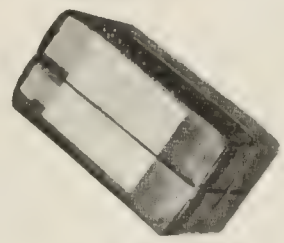
If you do not use Cling-Surface, find some one who DOES and ask how well it works. Ask for literature.

CLING-SURFACE CO., 1029 Niagara St., Buffalo, N. Y.

The Pictures Tell the Story



Sample brick being packed.



Arrived at destination in perfect condition.

Write Us for Prices and Samples

THE HINDE & DAUCH PAPER CO., Sandusky, Ohio

Gardner Read & E. Winfield Day

INSURANCE

1229 Insurance Exchange Chicago

Specialists in the reduction of insurance rates and fire hazards.

To those who place their insurance through us our service is free. Others we charge a percentage of the Net Savings which we secure, plus the actual expenses.

Do you know why you are being charged a certain rate and what is necessary to secure a reduction? We Do!

We personally argue discretionary charges before the various rating authorities having jurisdiction in your district.



Brick Houses

And How to Build Them

A book containing 219 (8x11 inch) pages illustrated by over 300 designs and details of brick house construction, beside perspective views and floor plans of 82 brick houses with estimates of cost construction and miscellaneous data about the use of brick from its manufacture to its placing in the building, including ornamental brick and tile work, sewer construction, fireplaces, brick veneer construction, arches, cements and mortars, how to estimate the cost of brick construction, etc., etc.

The houses shown are all of artistic design drawn by leading architects and show what can be accomplished by the use of brick as a building material.

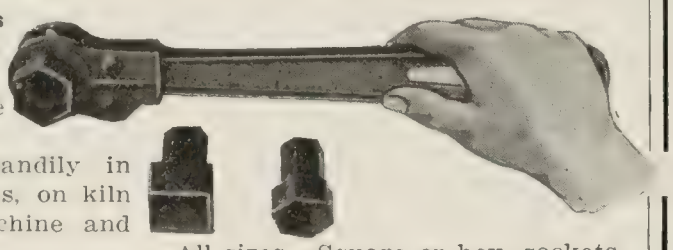
Price, Postpaid $1.00

Book Department *Brick and Clay Record* Chicago

Water Tanks
For
Utility and Safety
Built to last for Twenty Years
Used by such firms as
The Illinois Brick Co.
Made by
The Eagle Tank Co.
Chicago, Ill.
Write for Proof

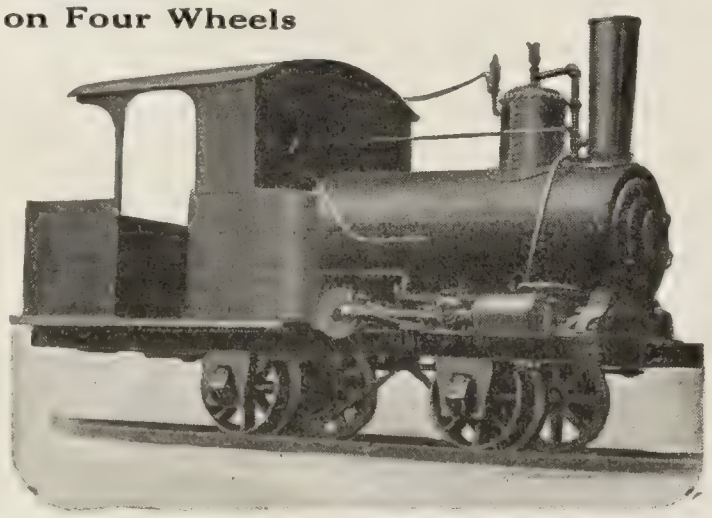


The Wright Ratchet Wrench
Only one application of wrench to tighten nut, and one application with socket reversed to loosen.
Eliminates bruised nuts and fingers.
Saves time and labor.
It works handily in unhandy places, on kiln bands, in machine and boiler room.



All sizes. Square or hex. sockets.
Chicago Manufacturing & Distributing Co.
2608 West 26th St.,
Chicago, - - - - - - - - - Illinois

"Getting There" on Four Wheels



THE DEWEY 5-Ton Locomotive
Costs $1200 About as Much as a Good Team of Mules
It Never Balks on Heavy Loads or Grades
It pulls a full load under every condition and on any track. Does more and costs less than any type of Standard Locomotive of same size and power.
"Let the Dewey Do Your Work"
Write
for descriptive literature and "reasons why" you will save money by having the Dewey in your plant.
DEWEY BROS.
GOLDSBORO, N. C.

Questions and Answers

(Continued from page 257.)

B.T.U. gas per ton of briquettes, or from 4,800,000 to 6,000,000 B.T.U. of available gas which could be used in the burning of clay products. This method was established by Prof. E. J. Babcock, dean of the School of Mining Engineering, at Grand Forks, N. Dak., and is giving very good results. But as it is the retort method and periodic, it is to be hoped it will not be long until further developments will result in a continuous and automatic process which will be more economical and less expensive to construct.

Clay products manufacturers, like the steel products people, must devise and adopt a by-product process so as to not only provide economical fuel that can be applied in a manner that will produce the best results, but assist in the elimination of our wholesale waste of natural resources. No smelter can successfully operate without coke. Coke is of a certain structure which supports the ore during the smelting process. Hence they erect coke oven by-product plants, and their by-products are gas, ammonium sulphate, tar, etc. The clay product manufacturers require gas that is cool, rich and clean, so that it can be put under pressure, and a valve control which gives them full control of the temperature, resulting in a uniform product.

To get that kind of a fuel economically they should erect gas by-product plants. They would be highly profitable and are found to be practical by manufacturers in other lines that depend upon heat for the production of their wares.

To Cure Blisters on Drain Tile.

606. *Illinois—We are having a great deal of trouble making our large size drain tile, especially the fifteen inch. They run fairly well at the machine and do not show up any great loss in drying. They seem to be in first-class condition when set in the kiln, but when we open the kiln sometimes half or more of our large tile are spoiled entirely. They seem to blister or blow out in patches of from four to sixteen inches in diameter. Sometimes we have very little loss and yet so far as we can see, our clay, machinery and general process of manufacture are identical with the conditions that existed before these losses began to occur. We have lately found that some of our tile when dry, show blisters which are about a half-inch high and possibly six inches in diameter. When we break these open we find the surface of the clay somewhat polished, just as if there had been laminations which were not knitted together. If you or any of your readers can given us any pointers, we will appreciate it, and if you want any more information we will be glad to give it to you or them.*

The above question was published in the Jan. 5th issue and an answer given which has brought forth some criticism. Ed C. Mead of the Enfield Vitrified Brick & Tile Company of Enfield, Ill., writes us as follows:

"I want to criticise the reply to question No. 606 in 'Brick and Clay Record' of Jan. 5th issue, in regard to blisters on drain tile. This is one trouble I learned to eliminate before I was large enough to do any firing, except slow firing. It is

also a trouble encountered on a great many yards, and as a rule, with a little thought a speedy remedy is found.

"To me it is absurd to connect the auger lamination with this trouble in hollow ware, nevertheless, it is true, this trouble is met with most frequently in the more plastic material. Lamination in drain tile is of little consequence when the ware is dried and burned properly according to circumstances, and is caused by the friction, 'on both ring and core of die,' of material, allowing the center of wall to travel more freely and naturally faster. It is easily understood how this condition will break the bond and leave laminations extending lengthwise and around the circle, and in some cases almost unbroken during any continuous operation of machine. Under the same conditions a plunger machine will produce the same results as the auger method. To eliminate the blisters 'if noticeable in dried ware' dry slower in the early stages and if ware goes into kiln sound and then blisters, the cure would be to fire with less speed, being sure to maintain an even and gradual increase in temperature. If you will furnish me the address of the brother claycrafter I will gladly furnish him the results of my experience after ascertaining more fully the conditions. My motto is: 'Help those in trouble. Boost clay products.'"

Wants Information About Drain Tile.

641. *Utah—Have you any information at hand pertaining to the breaking strength of drain tile? We are making a good clay tile which burns at a white or buff color. It has a good metallic ring, but does not vitrify. The porosity is about twelve per cent and, while the tile shows very good strength, when tested by placing on top of ground with a weight placed on top of the tile, we have not been able to tell how many pounds pressure it will stand or whether there is any standard to which a tile should come before it can be rated as being a good drain tile. Our tile stands all weather tests, including severe frost. Is it necessary for drain tile to be vitrified?*

The Engineering Experiment Station of the Iowa State College, Ames, Ia., has spent a number of years in experimenting with drain tile and sewer pipe with a view of formulating a set of specifications to which this material should conform. A number of tests have been made of the load-bearing ability and absorption of drain tile, the results of which are given in Bulletins 31 and 36 of the Engineering Experiment Station of the Iowa State College. A copy of these bulletins may be had on application to the college, and they will probably give you all of the information you desire. In the August 15, 1913, issue of "Brick and Clay Record" are given the standard specifications for drain tile and sewer pipe draughted by a committee of the Iowa State Drainage Association.

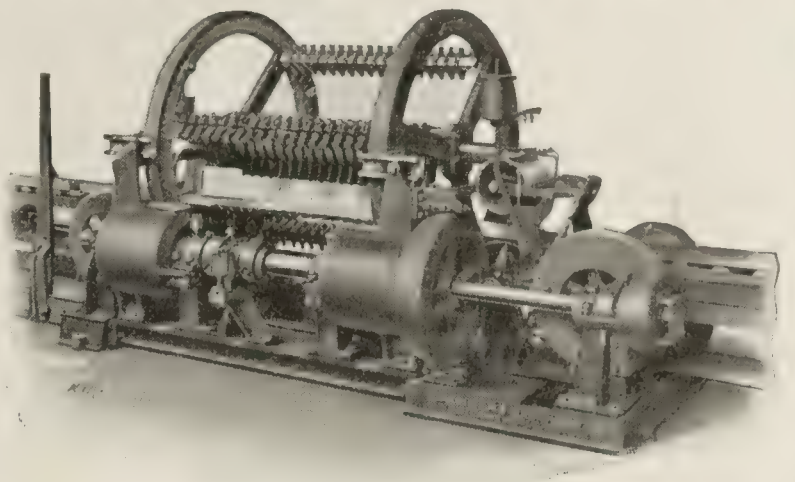
With regard to the porosity of your tile being twelve per cent, we would say, off hand, that this percentage would come well within the requirements for farm drain tile, as set down by Prof. A. Marston, who has had charge of most of the drain tile tests. In our opinion, it is not necessary that drain tile be vitrified if it is sufficiently hard and sound to resist ordinary handling and the amount of pressure to which it is subjected.

It is our understanding that the Iowa State College will make tests of drain tile samples which are sent to them, and this being the case, we would suggest your getting in touch with Prof. Marston and, if possible, arranging for a test of your tile.

Wants to Purchase Insulating Brick.

650. *New Jersey—We are looking for a good insulating fire brick—a brick to hold the heat from the iron shell. Some-*

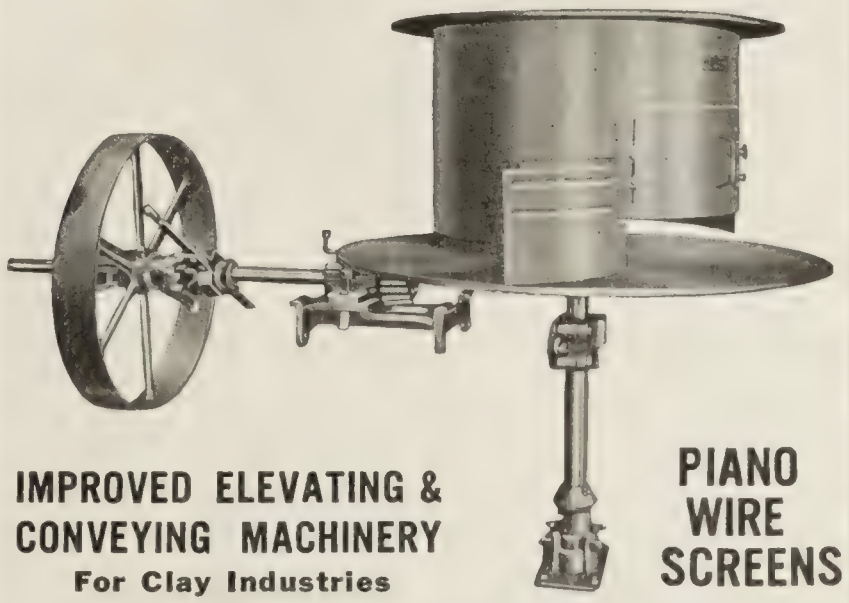
New Multiple Brick Cutter



THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

COLUMBUS
Automatic Feeder
INCREASES CAPACITY — IMPROVES PRODUCT
Let us explain!



IMPROVED ELEVATING & CONVEYING MACHINERY
For Clay Industries

PIANO WIRE SCREENS

Send for Catalogues
The Ceramic Supply & Construction Co.,
Columbus, Ohio

Right Now

is the time to practice
economy—by adopting

"NUGGET" Babbitt

Made Expressly for the Brick Trade

AFTER exhaustive research—including complete physical tests and general conditions incident with brick machinery operation, "NUGGET" Bearing Metal is found extremely efficient and economical.

Its hardness assures great wear resistance —coupled with high compressive strength and ability to withstand heavy duty.

Made in Round Cakes to Fit Your Ladles.

Price 15c per lb.

Manufactured solely by

The Cleveland Alloys Co.

Bearing Metal Experts

Cleveland, - Ohio

LEHIGH PORTLAND CEMENT COMPANY
LEHIGH PORTLAND CEMENT
CAPACITY OVER 2,000,000 BBLS YEARLY
ALLENTOWN, PA. AND CHICAGO, ILL.

Don't Take the Risk

If you make a good brick, why endanger its reputation by permitting the use of an inferior cement? Good brick should be set in good mortar and GOOD mortar is made of good cement.

A paving block doesn't get a chance if imbedded in poor concrete or set in an uncertain cement—just as well use tar and be done with it.

Lehigh Portland Cement is Dependable

Its mixture is uniform—high in strength—the same in color and fineness, and helps make permanent buildings and ever-lasting pavements.

Lehigh Portland Cement Co.

Main Office, Allentown, Pa.
Western Office, Chicago

one was telling the writer that there is a non-conducting insulating brick, which is made up of dead insects, the deposit being found in Colorado. If you know of anything like this and will advise us, we shall be very grateful.

The brick that has been described to you is doubtless the one made up of a combination of fire clay and Kieselguhr. This is manufactured by the Armstrong Cork Company, of Pittsburgh, Pa., and the literature which this firm issues will no doubt show you whether or not it is the product that you require for the purpose outlined in your letter.



The Semi-Monthly Trade Review

BUILDING construction throughout the country in January shows a slight improvement, there being a gain over December's total. The total for December was $31,603,322 for 112 cities. January's total for the same number of municipalities is $35,000,000, a gain of 9.7 per cent. In January, 1914, 146 cities reported a total of $45,999,862. The showing for January of this year is considered fairly good under the circumstances.

In leading centers like New York conditions are improving in an encouraging manner. Advices show that prices of Hudson river common brick under cover have advanced. Protracted mild weather has helped building construction work and has depleted the volume of common brick available on the docks. This has resulted in the shutting off of all open barge load quotations and leaving only covered brick for sale. This brick brings about $6.00 to $6.25 a thousand along side of dock. Raritan brick interests have followed suit and have advanced the price of brick to meet the Hudson level. The trade confidently expects there will be a further advance with $6.25 as the low level.

At the annual meeting of the Greater New York Brick Company in New York an January 19th a committee of seven was appointed for the purpose of shaping a policy for the company, the Board having voted to abide by the decision of the committee. The re-election of Philip Goldrick, who had retired, restored the board to its full membership. The officers elected were: John B. Rose, president; A. E. Aldrich, vice-president; Frank DeNoyelles, secretary, and Robert Main, treasurer.

In Chicago, and throughout the Middle West, there has been a decided restriction of new building, but conditions are shaping themselves for an active spring. The South is also showing the usual spring activity and from reports received from secretaries of local Boards of Trade and

from agents supplying materials to that section of the country, it is far from impoverished and is going to give a good account of itself in the building reports for the coming months. January's building below the Mason and Dixon line shows a total of $186,000,000 as against $192,119,000 in 1914, and $182,222,989 in 1913. The current building operations are not very far askew.

Points west have not felt the rebuilding movement as yet. There is spreading from the west eastward a "Build Now" propaganda, probably inspired by manufacturers of lumber, brick, equipment and other interests, that is having its good effect upon construction everywhere. The present low price of material, the general demand for new and better houses, the call for some safe investment at times like those just past has put more money into small building operations than for some time past. That is why business interests everywhere are talking optimistically.

Of the $764,179,925 spent in national building construction in 1914, not more than sixty-five per cent of it went ahead. The remainder was held up. This delayed building construction work may be expected to move ahead from now on. Add to the vast quantity of deferred building from last year the $35,000,000 reported for January of this year and it is logical to expect a building season of at least moderate activity. Why, therefore, is it necessary for brick manufacturers to sacrifice their profits at a time like this? Why is it necessary to shade and cut the market merely for a temporary gain? There is more cause for optimism bound up in the prospects for a prosperous 1915 than there has been at the opening of any year in half a decade.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

The North Alabama Brick Company, of New Decatur, Ala., has sold its plant to the Decatur Brick & Tile Company of Decatur, Ala.

Plans are now under way for the establishment of a roofing and floor tile plant at Birmingham Ala. The new company will be known as the Jefferson Mosaic Flooring and Roofing Tile Company, the work of establishing the new plant being under the direction of Maj. W. F. Tebbetts of Mobile, Ala., who is at the head of the National Mosaic Flooring and Roofing Tile Company of that city. The new company will have a capital of $50,000 to start.

CALIFORNIA

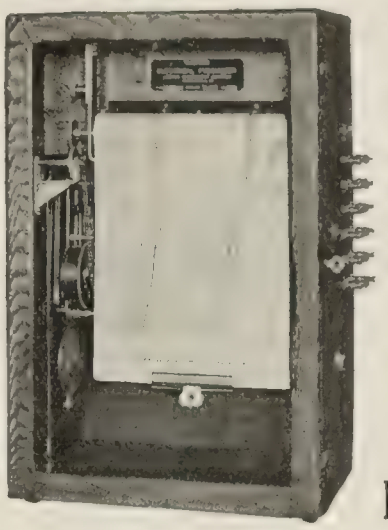
The Western States Porcelain Works of Richmond, Cal., are putting in a display of their wares at the Contra Costa County exhibit at the Panama-Pacific Exposition.

Manager W. W. Dennis of the McNear Brick Agency, San Francisco, Cal., reports considerable shipping to outside points, including a shipment to Astoria, Ore.

The plant of the Port Costa Brick Works on San Francisco Bay, Cal., has been closed down for a short time on account of the wet weather.

The United Materials Company, San Francisco, selling

Stop and Consider



the advantage in DOLLARS and CENTS of having a continuous record of the TEMPERATURE in all your lighted KILNS, on one chart.

The combinations possible with the TWINKO line of

Multiple Record Recording Pyrometers

are too numerous to describe in this limited space.

For example, the Recorder shown in cut will furnish one record each from six kilns; records from two points in three kilns, or three points in two kilns. Naturally the more information you have, the closer your control of firing conditions.

Just tell us how many kilns you fire at one time, and we will do the rest.

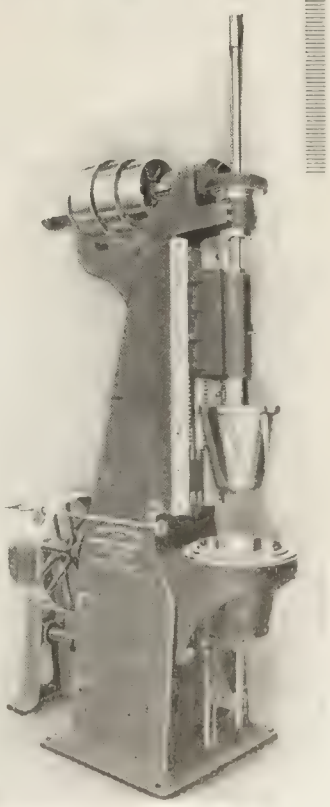
Thwing Instrument Company,
437 N. 5th Street Philadelphia, Pa.

Baird

Pot Molding Machinery

We specialize in Machines for the Manufacture of Pottery and Guarantee Every One We Sell.

Write us for information.



Baird Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.

The CANTON is the Grate for the Plant that Counts the Cost

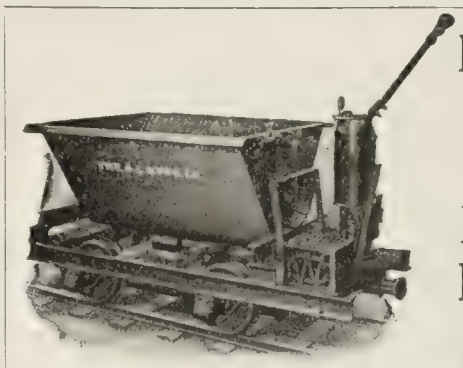
CONVENIENCE, ECONOMY and DURABILITY are the three important features which, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of the Canton Grate.

With its use every pound of coal is made to yield its full value, resulting in a saving of from 25 to 33⅓% on fuel, and a proportionate amount on labor. Absolute control of oxidation and reduction is also insured.

These are only a few of the many advantages to be gained through the use of the Canton Shaking and Dumping Grate—sufficient to convince you that you should investigate further.

Bulletin B contains additional information

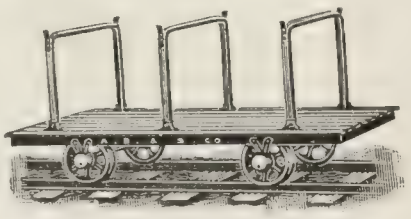
The Canton Grate Co.
Canton, Ohio



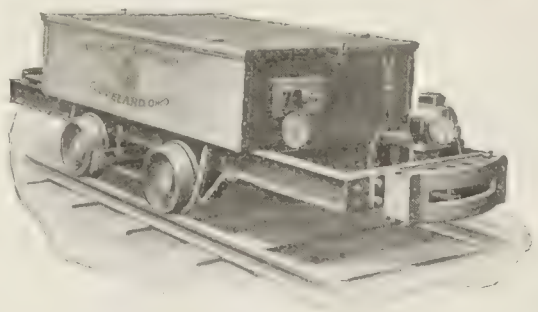
No. 217-E. Side Dump Car Equipped with Motor

REDUCE YOUR HANDLING COSTS
By the Purchase of Efficient Equipment

ATLAS
High Efficiency
Cars and
Electric Locomotives



No. 126 Double Deck Dryer Car



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.
Dept. I
1237 Marquette Road, Cleveland, Ohio

agents for the Los Angeles Pressed Brick Company, reports that the Richmond, Cal., plant of the latter company will be kept in operation throughout the winter.

The price for building brick in San Francisco and vicinity is firmer, now being held at $7.50 delivered on the job. Formerly brick was quoted at the yards, the contractors being allowed to make their own arrangements for delivering.

The Nathan-Dohrmann Company, leading crockery and pottery dealers of San Francisco, Cal., are making a special display this week of pottery made by the Arequipa Pottery of Marin County, Cal.

The San Francisco Board of Public Works has let a contract to Eaton and Smith of that city for brick pavement to be laid on Powell Street from Bust to Sutter Street, vitrified hillside brick being used throughout.

The Steiger Terra Cotta and Pottery Works of San Francisco, Cal., has secured the contract for the architectural terra cotta to be used on a three-story building now being erected for Mary L. Phelan in San Francisco.

California sewer pipe manufacturers are preparing for a busy season owing to the improved market for municipal bonds. The principal manufacturers are now building up stocks preliminary to the busy season.

N. Clark and Son of San Francisco, Cal., report having secured the terra cotta contracts for the Stanley W. Morsehead apartments and for the Trinity Lutheran Church in that city. They are also making deliveries on a large number of sewer pipe orders from country retailers.

The Adamant Manufacturing Company has been incorporated at Sacramento, Cal., with a capital stock of $150,000 by John Trede, C. E. Carlson, Charles King, and B. Langridge, all of Sacramento. The company will engage in the manufacture of brick and earthenware.

San Francisco brick men report a good outlook for some heavy work within the next sixty or ninety days. A large number of brick school houses are to be built in the suburban cities of Oakland and Berkeley, Cal. There is also to be some heavy warehouse work and two large sugar refineries. Later on approximately four or five million dollars will be spent on brick buildings for the State of California.

DISTRICT OF COLUMBIA

Despite the protest of Washington brick companies, the "rider" to the District of Columbia appropriation bill, containing authority for the workhouse at Occoquan, to furnish the Federal government with brick and other products manufactured at that plant, has passed the Senate. An effort will be made to stop the "rider" before it can pass the House of Representatives. As has been previously stated, the workhouse has always sold brick, along with other products, to the District government. This, in itself, has taken considerable business from the local brick factories. While the facilities at present at the workhouse are not great it is understood, that should the bill pass, the District officials will take steps to enlarge the brick plant.

GEORGIA

The Macon County Brick Company, Oglethorpe, Ga., has been incorporated with a capital stock of $100,000 by J. H. Oxford, J. M. Cobb, J. T. Lee and T. H. Rains.

Conditions are not so bad in the South as some people would have us think. As evidence of this fact, the Georgia-Carolina Brick Company, Augusta, Ga., is now

engaged in filling two large orders which call for over a million brick.

IDAHO

The Northwest Brick and Tile Company, Ltd., whose plant will be located at Dreary, Idaho, has been incorporated by T. P. Jones, woods superintendent for the Potlatch Lumber Company, Bovill, Idaho; J. A. Harsh of Dreary, Idaho, president of the First State Bank of Bovill, and F. C. McGowan, of Dreary.

ILLINOIS

August Kloppenburg, at one time owner of a large brick plant at Springfield, Ill., died at the home of his son on in a local brickyard for thirty-eight years.

J. W. Hamilton, trustee representing the United States Perfection Sand-Lime Brick Company, Chicago, Ill., has purchased a tract comprising one hundred and ten acres of land near Hortonville, Wis. Plans are now being prepared for the erection of a sand-lime brick plant on the nearly acquired site.

The Illinois Brick Company, Chicago, Ill., has been negotiating for the purchase of a farm adjoining its plant at Manteno, Ill. In the present pit at this plant, the clay is so shallow as to greatly add to the expense of removing it. The company therefore desires to secure a deeper clay bed near the plant.

Reports read at the annual meeting of the Purington Paving Brick Company held at the company's offices in Galesburg, Ill., recently showed the largest tonnage manufactured and shipped since the firm began business. F. G. Matteson was elected president and treasurer for the coming year; George C. Prussing and C. D. B. Howell vice-presidents and W. H. Terwelliger secretary.

At a meeting of the Sixteenth Avenue property owners of Rock Island, Ill., held about two weeks ago, the board of public improvements recommended the paving of Sixteenth Avenue with brick instead of asphalt as was originally planned. There are 3,316 square yards of paving to be laid on the project in question, which it is estimated will cost $9,000. The pavement extends from Twenty-Second to Twenty-Fifth Streets.

The Gem City Pressed Brick Company recently held its annual meeting at Quincy, Ill. Ezra Best was elected president; Fred Wilms, vice-president; W. S. Warfield, treasurer, and John T. Hummert, secretary and manager. A good business was reported for the early part of last year, and while there is a good stock on hand at the company's yard, it is expected that this will be taken up early in the spring.

Despite three months of idleness because of labor troubles, the annual report of the Illinois Brick Company which has been prepared for presentation to the stockholders at their annual meeting, shows net profits of $500,000 for the year ended December 31st, 1914. The company earned more than ten per cent on its $4,700,000 outstanding stock. The demand for brick in Chicago and vicinity at times during the past year has been such as to tax the capacity of the company's active yards. The price of $7.00 for commons has prevailed throughout the year and the outlook for 1915 is encouraging.

The Alsey (Ill.) Brick & Tile Company is building four 30 ft. down-draft kilns, which will increase the capacity of its plant to 30,000 fire-brick per day. This company has an unlimited supply of clay, being located in the heart of a tract of 800 acres underlaid with plastic fire-clay that runs in a 20 ft. drift and which is worked on a room-and-

WHATEVER equipment you need—don't buy until you know something about the

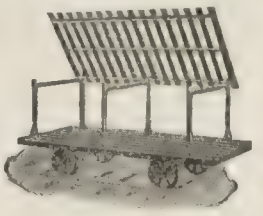
Lakewood Line



We Manufacture



Buckets, Kiln Bands, Pressed Steel Brick Pallets, Bearings, Portable Track, Ball Bearing Turntables, Switches, Richardson Double Die Steam Represses, also Miniature Hand Represses.



Cars of all kinds



The Lakewood Catalog No. 11 is more than a mere catalog—it is a treatise on Handling Equipment, and whether you are buying or not you should have a copy. Write us for one.

Lakewood Engineering Co.

Formerly the Ohio Ceramic Eng. Co. Cleveland, Ohio

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

Dryer Cars

Made of cast iron, with steel axles and braces, to prevent warping in the dry kilns. The wheels are pressed onto the axles which are on roller bearings. A strong car and easily moved—in fact, just the car you need.

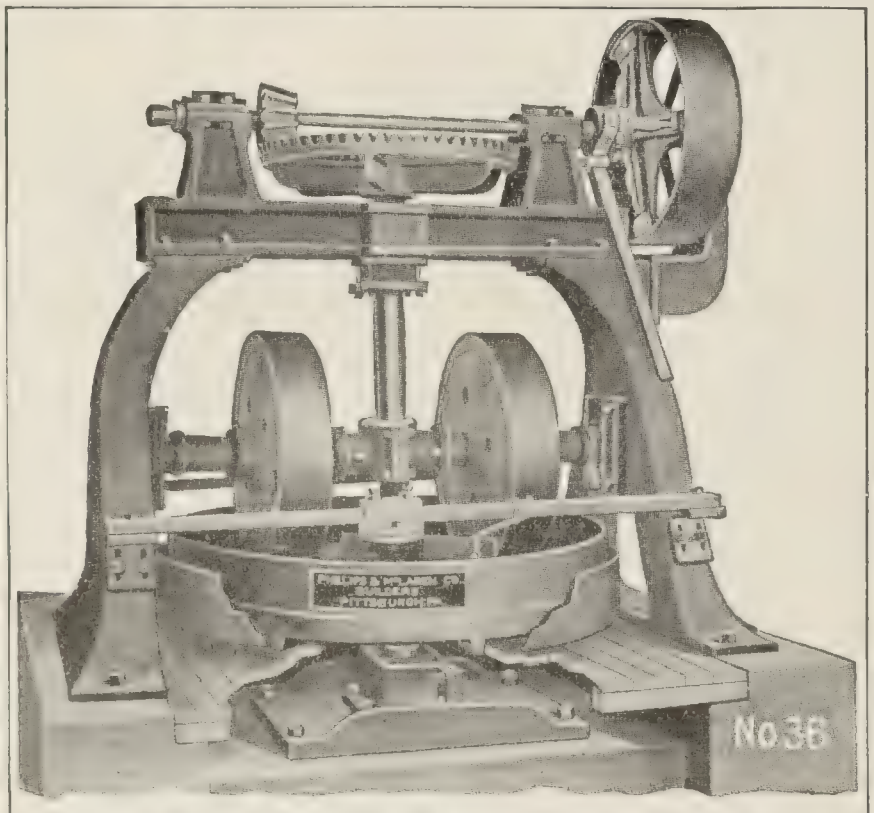
Pettigrew Dryer Cars have been used by Chicago's leading brick yards for years. We build them to give satisfaction to users.

We also maintain a large engineering department and pattern shop and are therefore in position to quote you on special cars or castings you need.

Pettigrew Foundry Co.

Dryer and Transfer Cars, Car Wheels, Turntables, Grate Bars and Kiln Grates.

Harvey, Ill.



PHILLIPS & McLAREN CO.

PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.

pillar system. The Alsey company owns exclusive mining rights on this tract. The clay runs very uniform in quality and it stands cone 31½ or about 3200 degrees Fahr.

In addition to its output of fire-brick, the Alsey Brick & Tile Company turns out a very high grade rough face face-brick which is finding a ready market in the larger centers of building activity.

INDIANA

The Clinton Paving Brick Company's plant, Clinton, Ind., has been shut down for a few days so that motors could be installed. The plant will be operated by electricity hereafter.

Judging from the volume of shipments from the two silo block factories located in Brazil, Ind., the silo block business will be unusually good this winter, and the coming spring will see a great demand for silos.

The Hydraulic-Press Brick Company of Brazil, Ind., has secured the contract to furnish the brick to be used in the construction of the new gymnasium for the De Pauw University at Greencastle, Ind. This building is to be one of the finest of its kind in the United States.

At the anual meeting of the Poston Paving Brick Company, Crawfordsville, Ind., recently held, the following officers for the coming year were elected: Col. I. C. Elston, president; T. H. Ristine, vice-president; H. H. Ristine, secretary; Lloyd A. Waugh, treasurer, and James M. Waugh, general manager.

At the annual convention of the Indiana Engineering Society, held at the Hotel Severin, Indianapolis, Ind., January 22 to 24, the twelfth floor of the hotel was given over to a complete exposition of products of interest to the engineers. Among the exhibitors were the National Paving Brick Manufacturers Association and the Dunn Wire-Cut-Lug Brick Company.

The National Drain Company, whose plant is near Hillsdale, Ind., has opened up a new shale pit. This was necessary on account of the supply at the plant becoming too hard to make a good grade of tile. The new pit will be opened just as soon as the railway switches can be put in shape. It is thought this will take about sixty days. In the meantime many alterations and improvements will be made in the plant, among them being the installation of two new boilers.

The Adams Brick Company, Martinsville, Ind., has been reorganized into a new corporation, which will be known as the Adams Clay Products Company. The company is incorporated for $50,000 and the stock is divided equally between Fred Adams, Martinsville; C. C. Coleman and Walter Acheson of Brazil, Ind. Mr. Acheson will be general manager of the plant. His many years of experience with the Indiana Paving Brick Company and other clay plants make him especially fitted for this position.

Emulating Henry Ford, the great automobile manufacturer, in his plan of dividing the profits of the business with employes, Thomas McCrea, president of the Brazil Hollow Brick and Tile Company, Brazil, Ind., recently surprised the workmen at the plant by enclosing with their regular weekly pay, a check for five per cent of the wages paid them during the past year. The gift went to the employes who have been with the company one year or more and aggregated close to $1,900. When the workmen received their envelopes they did not know what to think of the extra money and lingered around the plant while they read over the letter and satisfied

themselves the checks were good. They met at noon the following day and composed a letter of appreciation, which was sent to Mr. McCrea.

IOWA

Beginning with the 1st inst., the American Brick & Tile Company of Mason City, Iowa, will have a new sales manager. He is S. J. Galvin, formerly assistant general manager of the John Deere Plow Company of Moline, Ill. Prior to his connection with this plow concern, he held an official position with the Iowa Pipe & Tile Company.

KANSAS.

The Haines Tile and Mantel Company, of Wichita, Kan., recently completed a deal for a piece of land on which it is intended to build an extension to its present storehouse and also to enlarge its yard facilities.

KENTUCKY.

The Louisville Brick Company, Louisville, Ky., is finding business rather quiet just now, but reports that there is plenty of work in sight and that the outlook is good. The company has sold out its entire stock and has two large school house jobs on which to deliver brick as soon as the weather will permit. The company will push its new salt-glazed line during the coming year.

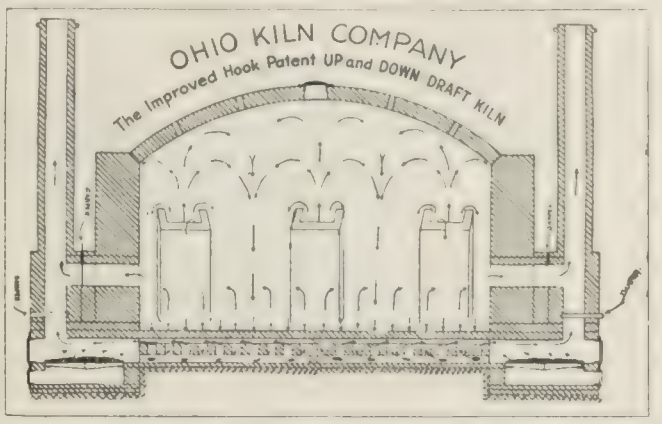
A. P. McDonald, sales manager of the P. Bannon Pipe Company, Louisville, states that the company is fairly busy with hollow tile, but that vitrified brick and other materials are moving rather slowly just now. Mr. McDonald has been bidding on a number of large jobs at Frankfort, Lexington, and other points out in the state. All of these jobs call for tile. The local plants are making nothing but tile just now.

The annual directors' meeting of the Coral Ridge Clay Products Company, Louisville, Ky., which was to have been held during the third week of January, has been postponed for the time being because of illness of one of the eastern directors. George Fiedler, superintendent of the company, said that the meeting would be held as soon as the various parties could make arrangements to meet in Louisville. The plant will start operations in a few days, in spite of the present bad weather, as spring orders are rather heavy and present stocks are dwindling rapidly.

Andrew Hillenbrand, head of the Hillenbrand Brick Manufacturing Company, Louisville, Ky., has been laid up for two weeks following an operation on his neck. However, he is now able to get down to the plant for a few hours a day, and expects to be entirely well before long. Mr. Hillenbrand said business was in excellent shape for this time of the year and good weather was all that was needed to make it better. The company now has on hand about a million brick, but has orders on hand for about 400,000 which cannot be delivered until the bricklayers are able to work. The plant is not operating at present, but will start up shortly.

Snow and ice, combined with freezing temperatures, have retarded the brick business considerably in Louisville during the past two or three weeks. Outside work for the time being has come to a halt and no deliveries are being made to speak of. A number of the local plants are closed down awaiting fair weather before resuming operations, but are making repairs and getting in good shape to run. Stocks are low as a rule, and considerable activity will be displayed on the part of the manufacturers as soon as the weather permits. The outlook at this time is exceptionally good. A great deal is in sight, the architects' offices being fairly well filled with work which will go ahead in the spring.

T. Bishop, of the Southern Brick and Tile Company, is very busy with drain-tile work. He now has out eight crews



BURNS EVENLY

Just as good ware taken from bottom as top.

No Damaged Ware from Water Smoking

Bottom pieces kept in perfect condition. Try the

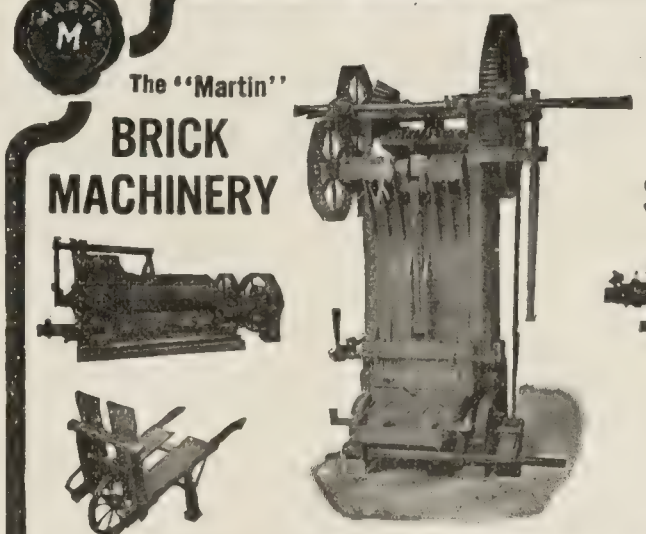
Improved Hook System
Don't White-Wash

But produces a nice clean uniform burn. Let us prove our claims—you have everything to gain and nothing to lose. Write for information.

OHIO KILN CO., VIGO, O.
Improved Hook Patent Kiln

The "Martin"
BRICK MACHINERY

Modern
YARD SUPPLIES



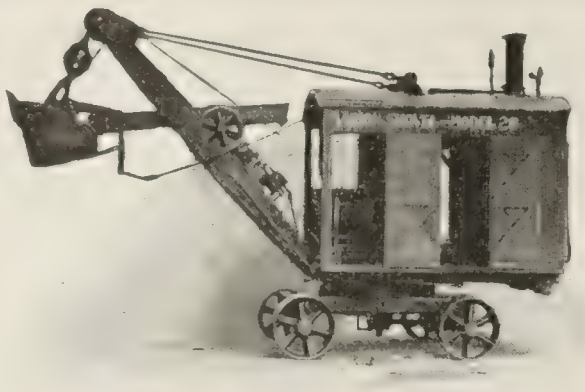
Soft-Mud or Stiff-Mud Processes
Get Our Plans
Dry or Wet Grinding Pans
Barrows and Trucks
Disintegrators
Clay Cars--Dryer Cars
Hoisting Drums

The Henry Martin Brick Machine Mfg. Co.

GET MARTIN PRICE LIST

LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG



"CAN'T BE BEAT"

Why did a clay manufacturer tell us that about his MARION Revolving Shovel? *Because* it was giving him satisfaction, *because* it was making him a greater profit and *because* it was saving him from worry and inconvenience with labor conditions. There's a MARION to help *you*, too, Mr. Clay Manufacturer—no matter what your capacity may be. There's a MARION that will give you *Constant Service*—better, quicker and more profitable results. Write for Catalog 92—it tells a story of interest to the Brick Man.

THE MARION STEAM SHOVEL CO.
[ESTABLISHED 1884]
Station A. MARION, OHIO

POSTERETTES



The best, brightest, most attractive poster stamp that has so far been issued.

It carries the "Build with Brick" slogan everywhere your mail or express packages meet the eye of a prospective builder.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO

of men who are ditching and laying tile for agricultural purposes. For twenty-five years the company has been handling drain-tile and laying it during the winter months. The company was originally very much opposed to handling the ditching work itself, but has found it to be almost impossible to dispose of the tile except by getting the work, and either doing it with the company's men or sub-letting it. Mr. Bishop gets out with the surveying squad and runs the levels, etc., the workmen handling the installation. The tile plant of the company at present is closed, but the brick plant is running full time.

The five per cent advance in freight rates recently granted to the railroads in Central Association territory will occasion a raise in price of face-brick on the part of the local brick jobbing concerns. Brick have been sold on a very low margin of profit for some time past, as competition is keen and several building supply houses are handling high-grade lines of face brick and competing with one another. According to Isaac Tyler, president of the Tyler Building Supply Company, it will be necessary for all of the houses to raise their prices. If this is done the effect of the increased freight rates will not be felt by any one concern. Practically all of the better grades of brick used in the Louisville district come from Maryland, Pennsylvania, Missouri, Indiana and Ohio. In every case the freight rates will be affected by the recent advance.

At a recent meeting of the directors of the Union Lime and Cement Company, of Louisville, which handles "Hytex" brick, the following officers were elected: John L. Wheat, president; Allen R. Carter, of the Herndon-Carter Company, vice-president and general manager, and E. P. Teague, secretary-treasurer. Mr. Carter was elected to succeed Leo M. Parsons, who leaves the company February 1 to take up other interests in the building material line. Mr. Carter has been a director of the company for several years, but has not been actively connected with the firm. He will now give a portion of his time to the company, but will give most of his time to handling the affairs of the Herndon-Carter Company, one of the leading commission houses of the city. Mr. Teague has held his present position for about one year. Mr. Wheat has been at the head of the concern for a great many years and is the oldest active business man on Main street. A. H. Fairleigh, of the sales department, will continue at the exhibit rooms in the Starks building, where he will be assisted by Mr. Teague.

The Engineers' and Architects' Club, of Louisville, met recently to elect officers and celebrate its thirtieth anniversary. The officers elected were: George Herbert Gray, president; Samuel Riddle, vice-president; Leo M. Parsons, secretary; F. H. Miller, J. C. Murphy, W. J. O'Sullivan, the city building inspector, J. M. Johnson, O. P. Ward and Addison W. Lee, directors. Lieut. Gov. E. J. McDermott, an honorary member, presided during the election and also addressed the club. Malcolm Elliott, the retiring president, delivered the annual address. A special musical program and a smoker followed the election of officers. A startling incident occurred while a picture was being taken of the party. An overcharge of flashlight powder used in making the picture caused such a great concussion that four large panes of glass between the club rooms and the corridor in the Starks building were blown out and the room was for the time being in darkness. Only one person was injured by the flying glass, however. Mr. Parsons, the new secretary, is a well known brick salesman.

MARYLAND.

The Westport Paving Brick Company, Baltimore, Md.,

and the Mack Manufacturing Company, New Cumberland, W. Va., have become licensees of the Dunn Wire-Cut-Lug Brick Company for the manufacture of wire-cut-lug paving brick.

MASSACHUSETTS

The Bay State Crockery Company, Boston, Mass., has been incorporated with a capital stock of $5,000, by Louis Alexander, Isaac Bachrach and Harry Ganok.

The Boston-Berkshire Composite Brick Company, whose new plant on West street in Dedham, Mass., has only recently been put in operation, has drawn its first kiln. It is estimated that the plant will have a capacity of 50,000 brick daily and it is expected that it will be operating to capacity within a short time.

A "Build Now" movement, which means much to dealers in building supplies as well as to the builders themselves, has been inaugurated in Boston and vicinity and is receiving the hearty support of public officials throughout the district. The sponsors of the movement declare that materials are cheaper now than they have been for a long time and that labor is plentiful. The open winter is aiding in the movement and many buildings that were planned for spring or summer probably will be started within a few weeks as a direct result. Dealers in materials have been asked to cooperate and are very generally taking hold of the movement and "boosting" it.

MICHIGAN.

Brick business in Detroit and throughout Michigan is about normal with conditions of the past sixty days, according to a prominent Detroit manufacturer. All of the large firms are keeping up their production in order to have a good supply on hand when the business opens up in the spring.

John A. Mercier, of Mercier, Bryant and Larkins Brick Company, John S. Haggerty, of the Haggerty Brick Company, and Charles H. Bryan, all of Detroit, attended the annual convention of the National Association of Builders' Exchanges, held at Columbus, Ohio, January 26 to 28.

The terra cotta used in the recently completed Jacob Siegel mercantile building, at Woodward and Clifford streets, Detroit, was furnished by the Dresden Brick Company, 911 Hammon building. It was manufactured by the Conkling-Armstrong Terra Cotta Company, for which the Dresden firm is the local representative.

MINNESOTA

The annual meeting of the Range Sand, Lime and Brick Company was held at Pengilly, Minn., a few weeks ago. This company's plant, which is not quite completed, recently shipped two cars of brick. The plant when completed will represent an outlay of about $70,000 and will be one of the best equipped in the state.

MISSOURI.

The American Press Brick Company, of Wellston, Mo., has increased its capital stock to $75,000. The entire new issue was taken by Edward J. Ryan, president of the company.

The Norman Clay Tile Company, of Nevada, Mo., is remodeling its plant, having bought the entire clayworking outfit of a dismantled plant. The greater part of the machinery was nearly new, and this is being used to replace much of the equipment formerly used at Nevada.

The Western Paving Brick Association reports contracts for 14,000 square yards of brick paving at Edina, Mo., and 35,000 square yards of brick paving at Sulphur Springs,

Shooting Shale
WITH
DU PONT
Explosives

SAVES MONEY
TIME AND LABOR

BLASTING clay banks is the method employed by the Purington Paving Brick Company, Galesburg, Ill.—one of the largest brick makers of America.

The manager of the Purington Co., writes about blasting clay with Du Pont Explosives as follows:

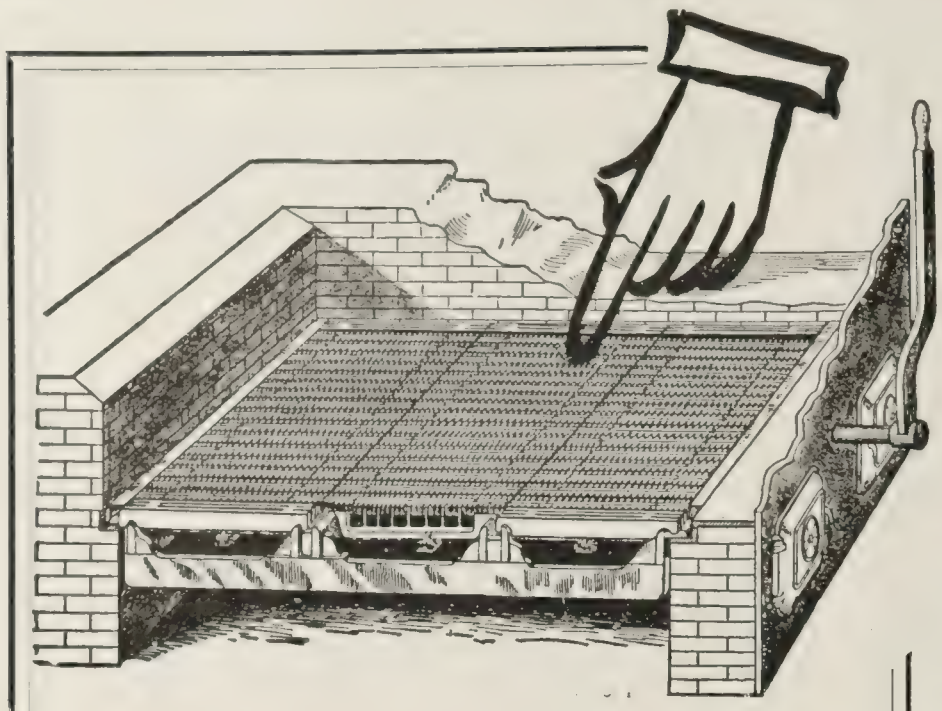
"Our experience in using Du Pont Powder has been very satisfactory. Before using explosives, we operated two steam shovels on two levels of the shale bank. Now we use one steam shovel, thereby saving several hundred dollars per month. Additional saving in cost of blasting has followed the adoption of plans suggested by the Du Pont Powder Company's experts."

We make explosives especially for the clay pit. A few well-placed charges shoot down tons of material in the best condition for quick, easy, low-cost handling.

Cut your brick-making costs. Shoot the shale with Du Pont Explosives.

FOR SPECIAL INFORMATION ABOUT CLAY BLASTING WRITE TO DEPT. 419

Du Pont Powder Co.
Established 1802
Wilmington, Delaware



More Steam from Your Boilers

Reduced cost of fuel — *burn any coal.*
More dividends for your stockholders.

These advantages are being accomplished by using

Martin Grates

Read the following letter:

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10, 1914.

Martin Grate Co., Chicago, Ill.

Gentlemen:—

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.
(Signed) C. A. Reaver, Secy.

The Martin Grate Co.

347 S. Dearborn St. Chicago, Ill.

Texas. Both contracts are for a three-inch vertical fiber brick.

The school board of Kansas City, Mo., is now advertising for bids on a $120,000 school, the Kensington, and will advertise for bids on two more school buildings within a few weeks. Plans and specifications are now in the hands of Smith, Ray and Lovett, architects, Finance building. In addition to these, the school board has plans under way for the completion of several other buildings.

NEW YORK.

The annual meeting of the Greater New York Brick Company was recently held in the offices of the company in New York. John B. Rose is president of the company.

Preliminary estimates as to the production of common brick in the state of New York show that there has been a decided falling off from the preceding season. This loss amounts to from 3% to 42%, in soft mud brick, according to locality. The production of the lower Hudson Valley will probably decrease 20% from the production of 1913. The greatest falling off, however, has been in Erie county, with an additional loss of about 63% for wire-cut brick. Many of the smaller yards have had to close, especially those depending upon only one method of transportation and also where the usual production has been small with only the local demand to depend upon. The larger yards depending upon foreign markets have had a fair season.

NORTH CAROLINA

At the annual meeting of the stockholders of the Dan River Brick Company, Pine Hall, N. C., the following officers were elected for the ensuing year: President and treasurer, Charles H. Stone; vice-president, W. M. Chisman, and secretary, A. F. Moses. The company's plant has been brought up to a high state of efficiency and is producing one of the best bricks sold in that part of the country. The plant operated continuously during the past year, except when prevented by floods or bad weather and is now operating to full capacity.

OHIO.

At the annual meeting of the Belden Brick Company, Canton, Ohio, it was decided to double the present capacity of the company's plant, employing about one hundred men instead of fifty-five, as at present.

With comparatively little business going on, as is usual in the midwinter period, the Pursell-Grand Company considered itself rather fortunate recently when it landed an order for 50,000 Fallston brown face-brick for use in the handsome new building of the Western Methodist Book Company, which is now in course of construction.

An additional storage shed will be constructed by L. H. McCammon Brothers, brick and material dealers, of Cincinnati, Ohio, before the opening of the building season, as the firm's facilities are getting too small for its business. The new building will be about thirty by one hundred feet, and will be used for the storage of brick, sewer pipe, and other material handled by the firm.

City Engineer Gehres, of Akron, Ohio, is considering the purchase of a brick-testing machine, in order to enable his department to test the brick used by the city in paving and for other purposes. At present, specimen brick are sent to Cleveland, where they are subjected to the rattler test. As the charge for this is three dollars for each test of ten brick, Mr. Gehres believes that the city should invest in a machine of its own. The cost of tests last year, for instance, was about $400, which is con-

siderably in excess of the cost of the machine, which is about $250.

A good business in building material lines is predicated for 1915 by William H. Hoagland, general manager of the Claycraft Brick Company, Columbus, Ohio. The last year was one of growth for this company and contracts already closed are said to be most encouraging. Two of the company's plants are now operating at full capacity and the third is running at about half of its normal capacity. The Claycraft Company will supply the brick for the new home of the Athletic Club in East Broad Street, Columbus, Ohio, and has the contract for the brick in the Elk's home.

The annual meeting of the Scioto Fire Brick Company, of Portsmouth, Ohio, was held recently, the election of officers resulting as follows: Charles W. Turner, president and treasurer; Arthur M. Turner, secretary and general manager, and Frank E. Hayward, vice-president. Directors include Arthur M. Turner, who succeeded Samuel Reed, for many years secretary of the company, Samuel M. Johnson, Frank E. Hayward, A. T. Holcomb and Charles W. Turner. The company suffered the partial destruction of its plant by fire during the past year, but aside from this, business was all that could be asked.

Ralph Coney, of the Moores-Coney Company, well-known Cincinnati brick and materials dealers, is one of the new board of directors of the local chamber of commerce, holding over from the election of last year. His company, according to Mr. Coney, is looking forward to a busy and prosperous year, with business already in sight and some that is sure to develop. In spite of unfavorable conditions last year, the company did a good business, and with the general improvement which is looked for, Mr. Coney sees no reason why 1915 should not be very much better.

Cincinnati brick and terra cotta manufacturers are looking forward to the letting of contracts on the new courthouse, which is to cost $2,500,000 or thereabouts, as this will be one of the biggest jobs in the city for several years, and will involve enough burned clay material to make it worth while for the concern that is able to get this business. Another large job which is to be let shortly through Architects Zettel and Rapp is a $40,000 picture show house in Price Hill, a suburb, which is to be built of brick, with a white-enameled brick front, trimmed with terra cotta.

President J. L. Murphy and sales manager M. M. Morrow, of the Hocking Valley Brick Company, of Nelsonville, Ohio, are doing a good deal of excellent personal sales work for their high-grade paving brick, visiting Urbana, Ohio, recently in connection with the arrangements for the letting of five paving contracts in that city. Their principal object was to see that proper provisions were made for including brick in the call for bids, as the city authorities had not decided upon the kind of material to be used, and the brick men desired to see that they had a fair chance at the business.

Brick circles of Cincinnati lost one of its veterans when William Mitchell, secretary and treasurer of the Mitchell Brick Company, with plants in Cincinnati, Ohio, and Lawrenceburg, Ind., died suddenly while at the Cincinnati plant. His two sons, William, Jr., and Edwin, were at the plant at the time. Mr. Mitchell was fifty-three years of age, and had been in the brick business virtually all his life. His father, George Mitchell, of Lawrenceburg, Ind., was one of the pioneer brick men of the Ohio val-

Service, Not Sentiment

There are many types of belting—Leather, Rubber, Gandy and the belts resembling "Gandy" in general appearance and claimed to be "just as good but cheaper." When you buy belting you want to get the greatest service and the maximum satisfaction for the least money—the belt you want to buy is the belt from which you get the best results.

Buy Gandy and Save Money

The initial cost of the Gandy is only about one-third that of Leather belting and much less than that of Rubber belting, while it does the work equally as well.

The Gandy Belt is not an experiment. It has been on the market more than thirty-five years. The splendid results it is giving under all conditions and in every field of effort, warrant a careful investigation by you before **you** place your next order.

We will explain our proposition fully to you if you return the coupon below.

Gandy Belting Company

732 W. Pratt Street

Baltimore, Md.

New York Office **36 Warren Street**

Tear Off Along This Line

The Gandy Belting Company,
732 W. Pratt Street,
Baltimore, Md.

Gentlemen:—Please send me without obligation, a sample of Gandy Stitched Cotton Belting, and all the information I need to give it consideration.

Name .....

Address (Street).....

City ....., State.....

Clay Working Machinery

Equipped with
Nuttall Cut Gears
give reliable operation and
assure continuity of output.

We build gears for

Dry Pans,

Pug Mills,

Sifters,

Agitators,

Blungers,

and any other machinery requiring gearing.

Address Dept. B

Nuttall

Pittsburgh

Made in U. S. A.

ley. Mr. Mitchell was a member of the Builders' and Traders' Exchange of Cincinnati, as well as of the National Brick Manufacturers' Association, and was well known in the trade in the Middle West.

A review of the business of 1914 at the recent annual meeting of the Webster Brick Company, of South Webster, Ohio, developed the fact that in spite of many obstacles business was good. The most serious drawback suffered was a fire, which nearly wiped out the company's plant. However, the year on the whole was entirely satisfactory. The new plant, built to replace the one which was burned, will be ready for operation in a short time, and will be modern in every respect, with increased facilities and capacity. Officers and directors elected at the meeting are as follows: President, A. L. Fullerton; general manager, Harry M. Strong; vice-president, Valentine Rice; treasurer, W. H. Fullerton; directors, A. L. Fullerton, W. L. Hitchcock, H. M. Strong, Valentine Rice and W. J. Griver.

A plant built on the unit system so that additions may be made as the business increases without interfering with the general labor and power saving plan, will be the feature of the new Dias Paving Block Company's establishment to be erected at Athens, Ohio. The plant, which will be constructed of brick and steel throughout, will require eleven and one-half acres of space. The kiln will be 750 feet long and will be of the continuous type. The capacity will be about two and one-quarter million brick annually. The dryer is of an improved type, having a capacity in proportion to the kiln. A storage shed with a capacity sufficient for four months supply of shale and clay will be erected, and thus insure the continuous operation of the plant regardless of weather conditions. Arrangements are being made for electric power with which to drive the machinery.

OKLAHOMA

R. L. Corley, of Oklahoma City, Okla., is about to make a thorough investigation into the possibilities of using the sand and limestone of Dade County, Fla., in the manufacture of sand-lime brick. N. S. Sherman, also of Oklahoma City is interested in this new project.

ONTARIO.

W. H. Cooper's brickyards at Hamilton, Ont., Canada, have been destroyed by fire. The plant was a total loss, insurance being carried on the buildings and machinery.

Mr. W. W. Smith, Shallow Lake, Ont., a well-known clay products manufacturer, is planning to attend the National Convention in Detroit. Mr. Smith is the inventor of the Sampson interlocking tile.

PENNSYLVANIA.

The Pittsburgh Bureau of Smoke Regulation has been making a series of tests and observations at the kilns of the various Pittsburgh brick companies.

The Mount Eaton Clay Company has been incorporated with a capital stock of $20,000. Rudolph J. Welzmiller, Saylorsburg, Pa., is treasurer of the new company, and John H. Richards, Jersey City, N. J., and William H. Kirkpatrick, Easton, Pa., are directors.

The new offices of the Central Home Company in the Vandergrift Building, Pittsburgh, Pa., have been thrown open for inspection. This company has leased a suite of rooms and fitted them up with a view of displaying the various uses of materials that go into building a home. There is a completely equipped bathroom, displays of roof-

ing material, hardware, lighting fixtures, etc. The walls of one of the rooms are decorated with various kinds of brick, laid up by a mason just as they appear in a house. There is a living room and small reception hall, furnished just as they would be in a typical home. The company claims its idea is different from anything in the country. The Central Home Company has built more then two hundred homes for clients in and about Pittsburgh during the past nine years.

Several hundred members of the Bricklayers' Company, of Philadelphia, Pa., and their friends, celebrated their 125th anniversary of the founding of the organization by holding a banquet at the Adelphia Hotel. Many women attended the banquet, which was of especial note, as only once before at these annual functions did the gentle sex have an invitation to attend. The program was especially varied for their entertainment and, besides the prominent addresses, a minstrel show was an added feature. Before the banquet the following officers were elected: President, David O. Boorse; vice-presidents, William C. Smith and R. C. Ballinger; treasurer, John C. Atkinson; secretary, Robert C. Hill; board of directors, Willard Myers, William H. George, Charles Walter, Charles P. Hart and Jacob R. Gordan. The treasurer, Mr. Atkinson, is now serving his sixteenth term. After-dinner speeches were delivered by the retiring president, Charles P. Hart; the newly-elected president, David O. Boorse; Robert C. Hill, John C. Atkinson and Jacob R. Gordan.

TENNESSEE.

M. G. Waller, of Maryville, Tenn., together with other interested parties is about to install a brick plant at Khotan, Tenn.

The Niemeyer Mantel and Tile Company is doing the tile work at the new Majestic Theater, next door to the Gayosa Hotel, Memphis, Tenn.

The Memphis Builders' Exchange, Memphis, Tenn., will hold its annual election of officers on February 2. In the basement of the Goodwyn Institute the club has permanent quarters, many firms have desk room there. Secretary Crawford keeps on file interesting building information of the South.

At the Building Material Men's Club on Madison Avenue, Memphis, Tenn., has been fitted up a permanent exhibit embracing booths from many leading supply concerns of that city. Secretary Kennedy keeps a register of all guests. Both the upper and lower floors are visited each week by many people interested in architecture and building.

TEXAS

The Star Clay Products Company, wth general offices in San Antonio, announce the purchase and installation of a full line of equipment for the manufacture of hollow building tile, partition block, etc. The plant is located at Elmendorf, a railroad station sixteen miles south of San Antonio, on the S. A. and A. P. R. R. The Star Clay Products Company has, for sometime past, manufactured "Star" fire brick and other fire clay products. Its going into the manufacture of fireproofing is a new departure.

WASHINGTON

The ship "Duguay Trouin" has arrived at Seattle, Wash., with a cargo of two thousand one hundred tons of firebrick from Newcastle-on-Tyne.

Through the efforts of the citizens' advisory commit-

The Hook System of Burning Clay Products
is an application of Uncommon Common Sense



At the Plant of the Vigo Brick & Tile Co., Vigo, Ohio. Burning Time for Standard Brick in these Kilns, 77 hrs.

Before using Uncommon Common Sense the shortest time that a kiln could be burned was 7 days and 7 nights, or 168 hours.

After using Uncommon Common Sense and installing The Hook System, the time was reduced to 77 hours, a temperature of 1850 degrees was reached, with an average consumption of 727 lbs. of coal per 1,000 standard brick. This in spite of the fact that brick are set wet, due to inadequate drying facilities.

The system here also burns drain tile in **less than** 30 hours, with 6 tons of coal. Both of the above instances include the **watersmoking period.**

We Believe In It

We will prove that it will save time and dollars for you; that it increases your present kiln capacity by 50 per cent.

Hook Patent Kiln Co.

Main Office: Vigo, Ohio.

Canadian Office: 250 Defferin Street, Toronto, Ont.



Patented May 2, 1911.

RAIN OR SHINE

Our first system
Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men."

Our last system
The Donnelly Brick Co., New Britain, Conn., says:

"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"

Write for literature and prices.

The Marinette Iron Works
C. J. Anderson & Son, Proprietors
Marinette, Wis.



tee, the county commissioners recently voted to use King County terra cotta on the new courthouse that is now being built for King County in Seattle, Wash. A. Warren Gould, architect for the county, protested vehemently against the use of terra cotta on the county building, but his objections were finally overcome by the citizens' advisory committee.

WEST VIRGINIA.

F. Vernon Aler, of Martinsburg, W. Va., is building a brick plant at that point. The first kiln will be set with building brick, which will be used in erecting the plant, but eventually the product will be turned into paving blocks.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

While the business of the domestic pottery manufacturers for 1914 was admitted to be up to the standard for the first nine months, there was a decided slump during the remainder of the year. This was caused by the buyers only ordering what they could use immediately, and as a result stocks became more reduced at the year-end than ever before. This condition has caused some very liberal buying so far this season, and while the first two weeks of the year are admitted to have been slow, orders since then have been on a very liberal scale.

All potteries in the western territory are in operation, some running to capacity, while others, being active, are not working full forces. There is not a domestic manufacturer but who holds the opinion that trade in the ceramic field this season will be the most extensive ever known.

The possibility exists that a special meeting of the United States Potters' Association will be held during the coming spring. While no definite announcement has been made to this effect, it is the opinion that a meeting would work to the mutual advantage of all. It is this year that the National Brotherhood of Operative Potters presents a new wage agreement to the manufacturers. Possible changes, or requests for changes in the wage agreement, are now being discussed by the various local organizations of the brotherhood, and in time these will be submitted to the national officers. The annual convention of the brotherhood will be held at Atlantic City in July as formerly. The wage agreement with the manufacturers expires October 1 next.

Announcement has just been made that the Buffalo Pottery Company, of Buffalo, N. Y., plans at an early date to start the manufacture of vitrified hotel and dinner service china, a product that is now being made by the Warwick China Company, of Wheeling, W. Va., the Mayer China Company, of Beaver Falls, Pa., and several other firms. There will be a division in the Buffalo plant, semi-vitreous ware being made in one part and the china body in another. Just how soon the Buffalo company will be able to place its new product on the market depends entirely upon the time consumed in making preliminary arrangements. The Blue Willow ware of this concern will be continued in the old or semi-vitreous body.

New shapes will most probably be used in the china body, and the two new lines will be complete in every detail.

Thomas Carr, for many years part owner and general manager of the Warwick China Company's plant at Wheeling, W. Va., has assumed the general management of the Smith-Phillips China Company at East Liverpool, Ohio. He succeeds Charles H. Bowman, who has gone to Akron, Ohio, to take the management of the Summit China Company's plant, which property has recently been acquired by the C. H. Bowman and Company of Cleveland, Ohio. The two Bowmans are not related. Mr. Carr was not very active in the pottery business after he disposed of his interests, but spent some time at leisure. It is also reported that he has become financially interested in the East Liverpool plant.

The Albright China Company, which is erecting a new ten-kiln plant at Carrollton, Ohio, has completed its $125,000 organization, and the plant is expected to be placed in operation within a very short time. The stockholders have elected the following officers: President, M. F. Albright; vice-president, William T. McNutt, of East Liverpool, Ohio; secretary, I. E. Mincks; treasurer, A. E. Albright. The board of directors include the officers and George W. Dunn. M. F. Albright will probably also assume the position of general manager. He was formerly connected with potteries in East Liverpool and Sebring, Ohio, and until recently was a stockholder and officer in the Carrollton Pottery Company, at Carrollton, Ohio.

The report of Manager Guy E. Crooks of the Crooksville China Company, Crooksville, Ohio, read at the annual meeting of the company recently, showed that during the past year the plant has done the largest volume of business of any year in its history. The plant was in operation three hundred days with an average daily employment of three hundred and twenty-five persons. The following officers were elected for the coming year: J. L. Bennett, president; W. H. Brown, vice-president; Guy E. Crooks, secretary-treasurer and general manager. After the meeting adjourned the newly elected officers and the office force enjoyed a good dinner at the Hotel Garrett.

With a number of new domestic pottery plants starting operation this season, the owners are drawing on the East Liverpool district for workmen, and the manufacturers are taking the pick of the applicants. During the past few weeks many East Liverpool workers have obtained positions in Sebring and Carrollton, while others have gone to the new plants at Clarksburg, W. Va., Grafton, W. Va., and Mt. Clemens, Mich. Trenton workers are now applying for positions in East Liverpool, Ohio.

An association of china clay producers in England is about to be formed, with the object of regulating output and maintaining prices. The English demand is quiet, some outlets being closed through the war.

Joseph G. Lee, for many years general manager of the Knowles, Taylor and Knowles Pottery at East Liverpool, Ohio, has retired from that concern, but still retains his financial interest in the company. It is also reported that Mr. Lee contemplates withdrawing from the active work he has been doing with the Potters Mining and Milling Company. The latter concern manufactures flint and spar for the potteries in the eastern Ohio district.

Edward J. Owen, who has taken over the management of the Paden City Pottery Company at Paden City, W. Va., will start to increase the capacity of that property. This plant has been bought by Messrs. Wallace and Wat-

Employed by Thousands—

But I Want to Work for You



I'll Move Any Loaded Car That's on the Track

Besides coming on trial (pay for me in 30 days if you like my work or return me freight collect), I am fully Guaranteed. Say you're willing to be shown by sending a trial order now.

$4.00 Hires Me For Life

Yours for Results

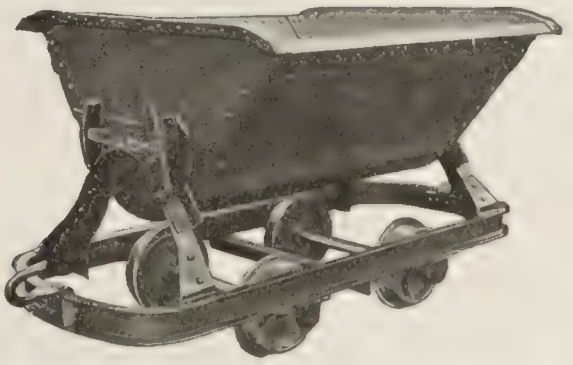
IDEAL CAR MOVER

P. S. Send for me today—no obligation.

We specialize in clay plant equipment, including Elevators, Screens, Track, Switches, Turntables, and

We Especially Commend

This Two-Way Dump Car



Write TODAY for our catalogue

H. B. Sackett Screen & Chute Co.

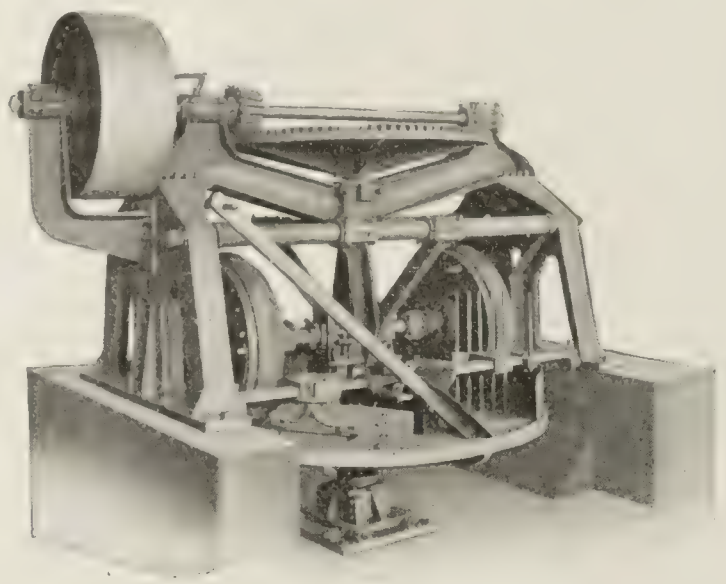
1681 Elston Avenue

Chicago

Branch Office and Warehouse Charlestown, Mass.

SACKETT 1685 ELSTON AVE CHICAGO

SACKETT 1685 ELSTON AVE CHICAGO



Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

son of Pittsburgh, Pa., the other interests who were identified with the company having withdrawn. A new body is to be created, and an increased line of cooking ware manufactured.

The D. E. McNicol Pottery Company, of West Virginia, has placed its new plant in operation at Clarksburg. The first kiln will probably be drawn by February 1. It is reported and not denied that this nine-kiln plant will double its capacity within the next year or so. Officials of the company will say nothing about their future plans. The management of the Clarksburg plant is also operating the D. E. McNicol Pottery at East Liverpool, Ohio.

According to the biennial report of the West Virginia Bureau of Labor compiled by Labor Commissioner J. H. Nightingale, of Charleston, there are fifteen potteries located in the state of West Virginia. Invested in these fifteen potteries is $2,138,865 and the value of their products is placed at $355,558. Approximately 2,644 persons are employed as potters in the state and receive the sum of $1,930,470 in wages annually.

Falling right in line with the "Made in U. S. A." movement, Atlantic City's (N. J.) newest palatial hotel is to come to Trenton for its table ware. This is a decided change from the former policy of most large hotel proprietors, who have, in the past, been particularly proud of their displays of foreign-made china. It is very encouraging to note this trend toward a more patriotic support of home industries and a gradual mitigation of the craze for foreign-made goods.

The report is current in the West that a ten-kiln pottery is to be built at once in the vicinity of Zanesville, Ohio, for the purpose of manufacturing cooking ware. It is said that the ground has been procured, and that funds have been secured to finance the deal.

Homer J. Taylor has succeeded his father, the late Col. John N. Taylor, as president of the Knowles, Taylor and Knowles Pottery Company at East Liverpool, Ohio. He is the youngest president of a pottery corporation in the United States.

E. D. Moore, assistant secretary and credit manager of the Knowles, Taylor and Knowles Pottery Company, Alliance, Ohio, has resigned his position which he has held for a number of years.

A small blaze was caused about a week ago by the falling of a peep hole brick on the roof of the Limoges Pottery, Alliance, Ohio. Little damage resulted, due to the timely discovery of the fire.

Freight Tariffs and Troubles

(Continued from page 260.)

rates charged on shipments made from March 12 through April, 1914, from Midland, Ind., to Fort Dodge, and ask for reparation.

The Commissioners have just issued an order permitting an amendment in case No. 7596, of the Duffney Brick Company, et al., against the Boston and Maine Railway Company.

A suspension order has just been issued further suspending until July 29, 1915, the operation of certain schedules

contained in the I. C. C. tariffs of the Chicago, Rock Island and Pacific Railway Company. The suspended schedules provide for the cancellation of joint rates on carload and less than carload traffic originating at or destined to stations and industries located on the Chicago Warehouse and Terminal Company and the Merchants Lighterage Company at Chicago, Ill., in connection with the Chicago and Alton and various other interstate carriers.

The following reparation orders on clay products have been allowed by the Commissioners since our last issue:

United States Brick Company vs. the Southern Railway Company. A refund of $88.84 was allowed because of an unreasonable rate applied on five carloads of brick shipped from Tell City, Ind., to Taylorsville, Ky., during the period from October 4 to November 15, 1912.

Yingling-Martin Brick Company vs. the Pere Marquette Railroad Company, et al. A refund of $23.09 was allowed on account of an unreasonable rate applied on one carload of building brick forwarded from Johnsonburg, Pa., November 11, 1912, to Bad Axe, Mich.

Brown-Hull and Company vs. the Southern Railway Company, et al. A refund of $19.15 was allowed because of an unreasonable rate charged on one carload of fire brick shipped from Mission Ridge, Ga., on February 2, 1911, to Keokee, Va.

The Great Northern Manufacturing Company vs. the Pennsylvania Railroad Company. A refund of $6.79 was allowed because of an excessive rate applied on one shipment of earthenware made from East Liverpool, Ohio, to Opal City, Ore., on June 14, 1911.

The Spring Garden Brick Company vs. the Maryland and Pennsylvania Railroad Company, et al. A refund of $163.77 was allowed on account of an unreasonable rate applied on four carloads of brick forwarded from East York, Pa., to College, Md., during the period from November 19 to December 3, 1913.

Denver Sewer Pipe-Clay Company vs. the Colorado and Southern Railway Company, et al. A refund of $172.15 was allowed on account of the unreasonable rate charged on nine carloads of brick shipped from Denver, Colo., to Casper, Wyo., in October and February, 1914.

Illinois Commission Hears Brick Rate Protests.

A hearing was held on January 26 by the Illinois Public Utilities Commission in Chicago, Ill., on complaints against proposed increased freight rates on brick to various stations on the lines of the Chicago, Milwaukee and St. Paul and the Northwestern Railroads. The carriers propose a raise in existing rates that ranges from 1¼ to 1½ cents per hundred pounds to two cents per hundred pounds. The Illinois Brick Company, National Brick Company and Allis Brick Company are the complainants.

Correcting An Error.

In the December 15 issue of "Brick and Clay Record," on page 1217, the following item appeared under "Changes in Freight Rates":

From Eaton, Pa., silica brick, to Laurel Hill, N. Y., $1.75 per net ton.

This should have read:

From Exton, Pa., silica brick, to Laurel Hill, N. Y., $1.75 per net ton.



I'll Submit Free

A Complete Advertising Campaign to Any Clay-Worker

In the January 19 number of "Brick and Clay Record" I told you how I had retired as editor of the best clay products journal in the world, and formed an organization of advertising experts. I also told you, for introductory purposes, I would plan and lay out a full advertising campaign for any clay worker who would write and ask for it.

There Are No Strings to This Offer

I mean just what the offer says—I'll submit a complete advertising plan, based on my knowledge of the clay-worker's need gained by the close, personal experience I had in the clay product field.

This Plan Will Not Be Ready-Made —It is Built to Your Order

I'll study your own peculiar problems, and prepare the plan to fit your individual case. Every step will be thoroughly covered, including an item of cost for printing and mailing.
Then, if after you have received it and you find it is not worth buying, you do not have to buy it. And, mind you, this offer holds good to the $10 fellow as well as to the $100 client.

Tell Me These Facts:

Answer all the questions on the coupon to the right, and write me whatever you think I ought to know about your market—your territory limits and other conditions. If you have any printed matter, send me samples.

This Free Offer is Limited

I can only prepare a limited number of these free plans, so do not delay in writing to me. Each application will be treated in the order received—be among the first!

MAIL COUPON

Fill out the little coupon at the right, tear it off, pin it to your letterhead and mail it **today.** Or, if you prefer, answer the questions on a separate sheet of paper.

Address me—
Iverson C. Wells
Care of Wells-Royse, 1305 Monadnock Block, Chicago

As a result of our advertisement in the January 19 issue of "Brick and Clay Record," we received twenty-eight requests (to date) from clay-workers who accepted our unusual offer.

TEAR OFF AND MAIL
with every question answered.

Wells-Royse,
1305 Monadnock Block, Chicago.

You may send us your **Free** Advertising plan built especially for our firm, as per your offer in "Brick & Clay Record." This does not obligate us in any way.

What product?.....
Trade Names of Products? (if any) .....
Daily Capacity?.....
Number of Prospective Customers in territory? .....
Name of Newspaper You Would Use? .....
What is the advertising rate per inch? .....
Ever used any printed booklets or circulars? .....
(If so, send samples)
Have you any Salesmen? (how many?) .....
How much will you spend on a full year's advertising? (amount to cover printing, writing, and advertising, if any) $.....
(Name of Firm).....
.....
(Your Name and Position).....
.....
(City) .....
(Street) .....
(State) .....

Is it worth anything to you to reduce in pronounced form your burning costs and time of burning?

If it is, then why hesitate about installing the

Underwood Producer Gas Burning System

Patented

You need its economies, its conveniences, its numerous other advantages to get the best out of your business.

The Manufacturers Equipment Co.

Everything for the Clayworker

Dayton, Ohio U. S. A.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points.

From Beach Ridge, N. Y., building brick, paving brick, drain tile and hollow building tile, to Hamilton, Ont., $1.42 per net ton and to Toronto, Ont., $1.62 per net ton.

From Beach Ridge, N. Y., drain tile and hollow building block, to Welland, Ont., $1.21 per net ton.

From Beech Creek, Irvona, Karthaus, Mill Hall, Orviston, Patton, Clymer, Bigler and Clearfield, Pa., fire brick and fire clay, to Gary, W. Va., $4.94 per net ton.

From Black Rock, N. Y., brick and clay products, to Bridgeburg, Ont., 42c per net ton; to Font Hill, Welland and Welland Junction, Ont., 79c per net ton; to Merritton and Thorold, Ont., 84c per net ton.

From Black Rock, Buffalo and Suspension Bridge, N. Y., curbing, vitrified and fire brick, tank or furnace blocks, fire blocks, fireproofing clay, flue lining, stone conduits, stove linings, tuyere clay, to Detroit, Mich., 7.9c per cwt.

From Black Rock, Buffalo and Suspension Bridge, N. Y., fire brick and fire clay, to Chicago, Ill., 10.2c per cwt.; to East St. Louis, Ill., and St. Louis, Mo., 13.7c per cwt.

From Corry, Pa., common brick, to Detroit, Mich., $1.68 per net ton.

From Gettsburg, Pa., brick to Port Jervis, N. Y., $2.52 per net ton.

From Gettysburg, Pa., brick, to Stroudsburg, Pa., $1.84 per net ton.

From Niagara Falls and Suspension Bridge, N. Y., common, building and paving brick, drain tile and hollow building tile, to Batavia and Wilson, N. Y., 75c per net ton; to Burt, N. Y., 80c per net ton; to La Salle and Sanborn, N. Y., 40c per net ton.

From Oaks and Perkiomen Junction, Pa., brick, to Allentown, Pa., 68c per net ton.

From Palmerton, Pa., clay, to Philadelphia, Pa., $1.50 per net ton.

From Kaulmont, Pa., clay products, to Heathcote, Mount Vernon, Westchester Avenue, White Plains, and Wykagyl, N. Y., $2.84 per net ton.

From Kaulmont and St. Marys, Pa., clay products, to Norfolk, Va., $2.62 per net ton.

From Kaulmont and St. Marys, Pa., clay products, to Detroit, Mich., $1.68 per net ton.

From Kaulmont and St. Marys, Pa., clay products, to Erie, Pa., $1.32 per net ton.

From Kaulmont, Drummond, St. Marys and Shawmut, Pa., clay products, to New Berlin, N. Y., $2.42 per net ton.

From Middle West Points.

From Armstrong, Barrett, Evansville, Griffin, Hovey, Martin, New Harmony, Poseyville, Stewartsville and Wendel, Ind., common brick, to Ashley, Ill., 89c per net ton and to Eldorado, Ill., 84c per net ton.

From Campus, Ill., brick to Chicago, Ill., 68c per net ton; to Forrest, Ill. 65c per net ton; to Manhattan Ill. 68c per net ton, and to Saunemin, Ill., 53c per net ton.

From Columbus and South Columbus, Ohio, brick, to Marting, W. Va., $1.68 per net ton.

From Corunna, Mich., brick, to St. Joseph, Mich., $1.48 per net ton and to Ypsilanti, Mich., $1.05 per net ton.

From Galesburg, Hopewell, Macomb, Monmouth and Streator, Ill., sewer pipe, to Kamsack, Sash., 43.6c per cwt.

From Indianapolis, Ind., fire brick and crude fire clay, to Peoria and Pekin, Ill., $1.42 per net ton.

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.

Blocks.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Manufacturers Equipment Co.
Marinette Iron Works.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.
Martin Brick Mach. Mfg. Co.

Buckets.
Dodge Mfg. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Manufacturers Equip. Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Car Movers.
Marion Machine, Fdry. & Sup. Co.
Sackett Screen & Chute Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Cement Filler.
Lehigh Portland Cement Co.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Louisville Machine Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Dodge Mfg. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Schultz & Son, A. L.
Weller Mfg. Co.

Coloring.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Machine Mfg. Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Louisville Machine Co.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Richardson-Lovejoy Eng. Co.
Rodgers Eng. Co., L. E.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Martin Brick M. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Phillips & McLaren.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

THE BUYERS' DIRECTORY—Continued

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Copping Bros.
Deavitt, H. M.
Dodge Mfg. Co.
Freese & Co., E. M.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Schaffer Eng. & Equip. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Copping Bros.
Freese & Co., E. M.
Richardson-Lovejoy Eng. Co.

Explosives.
Du Pont Powder Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Fuel Economizers.
Sturtevant Co., B. F.

Furnaces.
Brown Instrument Co.
Richardson-Lovejoy Eng. Co.
Stupakoff Laboratories.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Nuttall Co., R. D.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Insurance.
Read & Day.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Klose, K. W.
Manufacturers Equipment Co.
Ohio Kiln Co.
Richardson-Lovejoy Eng. Co.
Schaffer Eng. & Equip. Co.
Snowden & Co., Geo. E.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Eagle Tank Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Fairbanks, Morse Co.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Ricketson Mineral Paint Wks.
Wiliams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.

Powder.
Du Pont Powder Co.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Dodge Mfg. Co.
Jackson & Church Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

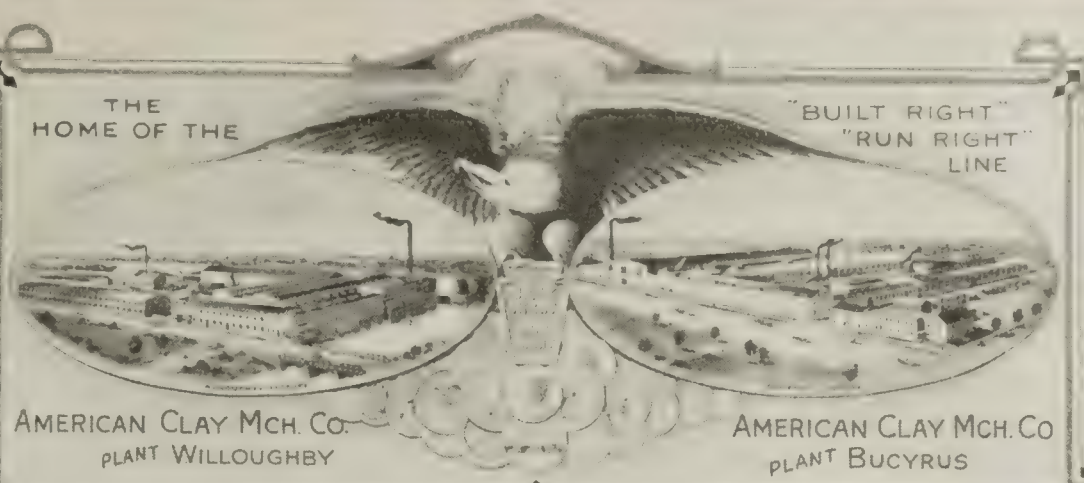
Pug Mill Repair Parts.
Lehigh Car, Wheel & Axle Wks.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Dodge Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

Pumps, Steam.
Pulsometer Steam Pump Co.

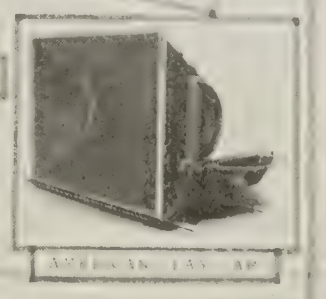
Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.
Thwing Instrument Co.




AMERICAN No. 392 REPRESS

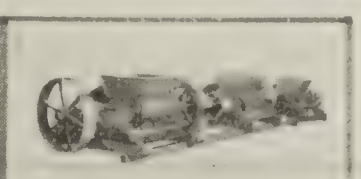


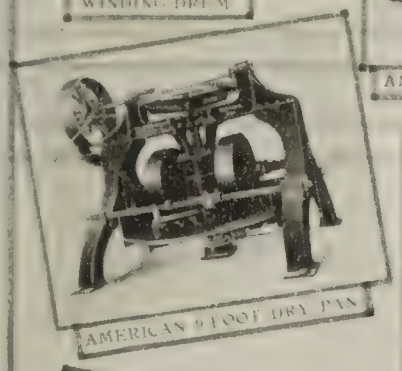

AMERICAN No. 245
WINDING DRUM

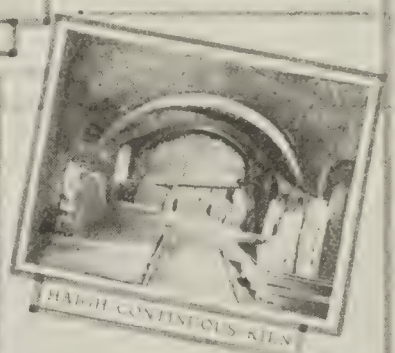



AMERICAN No. 291 PUG MILL


AMERICAN No. 20
ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN 9 FOOT DRY PAN



The Detroit Convention

We will be pleased to have every Clayworker call at the headquarters of The American Clay Machinery Co. at the Detroit Convention.

We are anxious to meet all old friends and acquaintances as well as new ones.

We will have something interesting to show every Clayworker whether he be a customer or not. The general good of the industry takes precedence over all other matters and we will be able to show you something for the increased use of brick and other clay products.

Every Clayworker who is contemplating an increased capacity or a betterment of his product, should look into the merits of the new line of machinery we have recently placed upon the market.

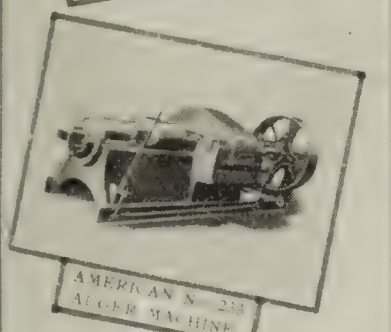
These machines are up-to-date in efficiency. They are economical in power, are simple, strong, durable.

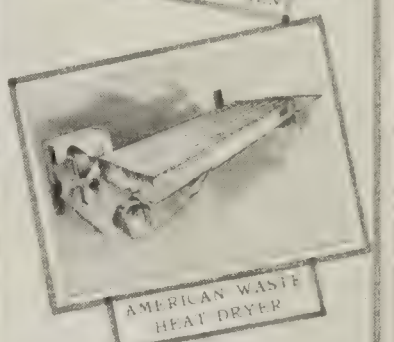
Whether in the market now or not, you should be posted on these machines. Your inquiries will have prompt attention.

We build every machine and appliance needed in making every kind of clay products and solicit the small as well as large orders.

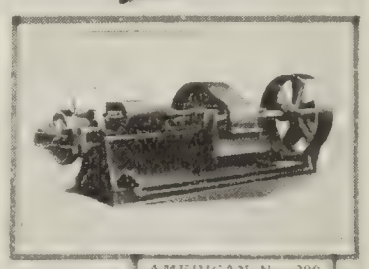
The American Clay Machinery Co.

Bucyrus, Ohio

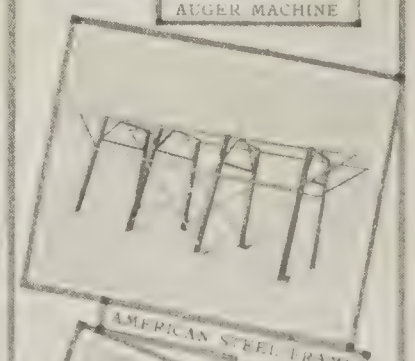

AMERICAN No. 238
AUGER MACHINE


AMERICAN WASTE
HEAT DRYER


AMERICAN DRYER CAR

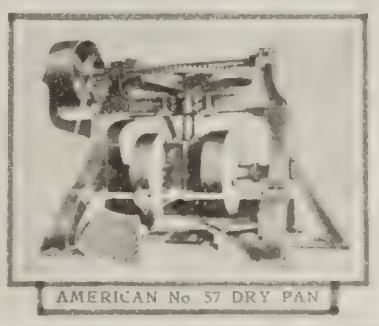

AMERICAN No. 290
AUGER MACHINE

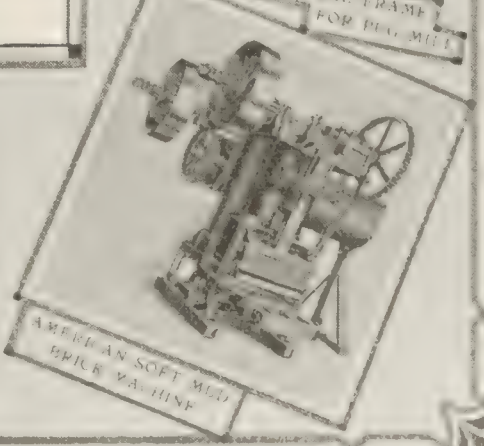

AMERICAN STEAM SHOVEL


AMERICAN STEEL FRAME
FOR PUG MILL


AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No. 57 DRY PAN


AMERICAN SOFT MUD
BRICK MACHINE

THE BUYERS' DIRECTORY—Continued

Quartz Glass Articles.
Engelhard, Chas.

Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Frank, M. K.
Foster Co., L. B.
Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial.)
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Ratchet Wrench.
Chicago Mfg. & Distributing Co.

Rattler.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.

Revolution Indicators.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.
Cling-Surface Co.
Dodge Mfg. Co.

Roofing Tile Machinery.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Sand Dryers.
American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Martin Bk. Mach. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.

Shale Planer.
Arbuckle & Co.

Shovels (Hand).
Sackett Screen & Chute Co.

Silo Iron Appliances.
Eagle Tank Co.

Soft Mud Brick Machines.
American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Wallace Mfg. Co.

Steamers (Clay).
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.
Brown Instrument Co.

Steam Separators.
Canton Grate Co.

Steam Shovels.
American Clay Machy. Co.
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Wallace Mfg. Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Tanks.
Eagle Tank Co.

Steel Towers.
Caldwell Co., W. E.
Eagle Tank Co.

Supplies.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.
Weller Mfg. Co.

Tanks.
Caldwell Co., W. E.
Eagle Tank Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Wallace Mfg. Co.

Tile Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co
Standard Dry Kiln Co.

Tramways.
Ambursen Co.

Transfer Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.

Unloading Devices for Pans.
American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.

Wagons.
Auburn Wagon Co.

Water Softeners.
Dodge Mfg. Co.

Water Tanks.
Caldwell Co., W. E.
Eagle Tank Co.

Wet Pans.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles (Car).
Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.

Winding Drums.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.



Barrett's PAVING PITCH



Knoxville Avenue, Peoria, Ill. Brick Pavement Filled With Barrett's Paving Pitch.

For Street Railway Paving

BARRETT'S Paving Pitch is the only proper filler for brick pavements in the neighborhood of street railway tracks.

Of the other fillers sometimes used, cement is too rigid, being shattered by the vibration o fthe rails.

Sand admits water and frost to the foundation.

Pitch, however, takes up vibration and protects the bricks from the jarring of the rails, which otherwise would quickly crack them. It is a good insulator, having high electrical resistance. Being absolutely waterproof, it keeps the metal, underground wires, etc., dry.

In making track repairs pitch filler permits the blocks to be removed without any loss, whereas with cement filler it would be necessary to destroy the bulk of the brick which was removed.

Pitch is easily handled, and the ordinary track repair gang can use it in replacing a pavement, as it does not require any special labor.

Paving Pitch booklet on request.

BARRETT MANUFACTURING COMPANY

NEW YORK CHICAGO PHILADELPHIA BOSTON ST. LOUIS CLEVELAND CINCINNATI
PITTSBURGH DETROIT BIRMINGHAM KANSAS CITY MINNEAPOLIS
SALT LAKE CITY SEATTLE

WEBB WIRE WEARS WELL

WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.

8,000 SOFT MUD BRICK PER HOUR

is the guaranteed capacity of our brick machine with automatic mold dumper combined.

¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

General Traffic Association, Inc., Woodward Building WASHINGTON, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts.

Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

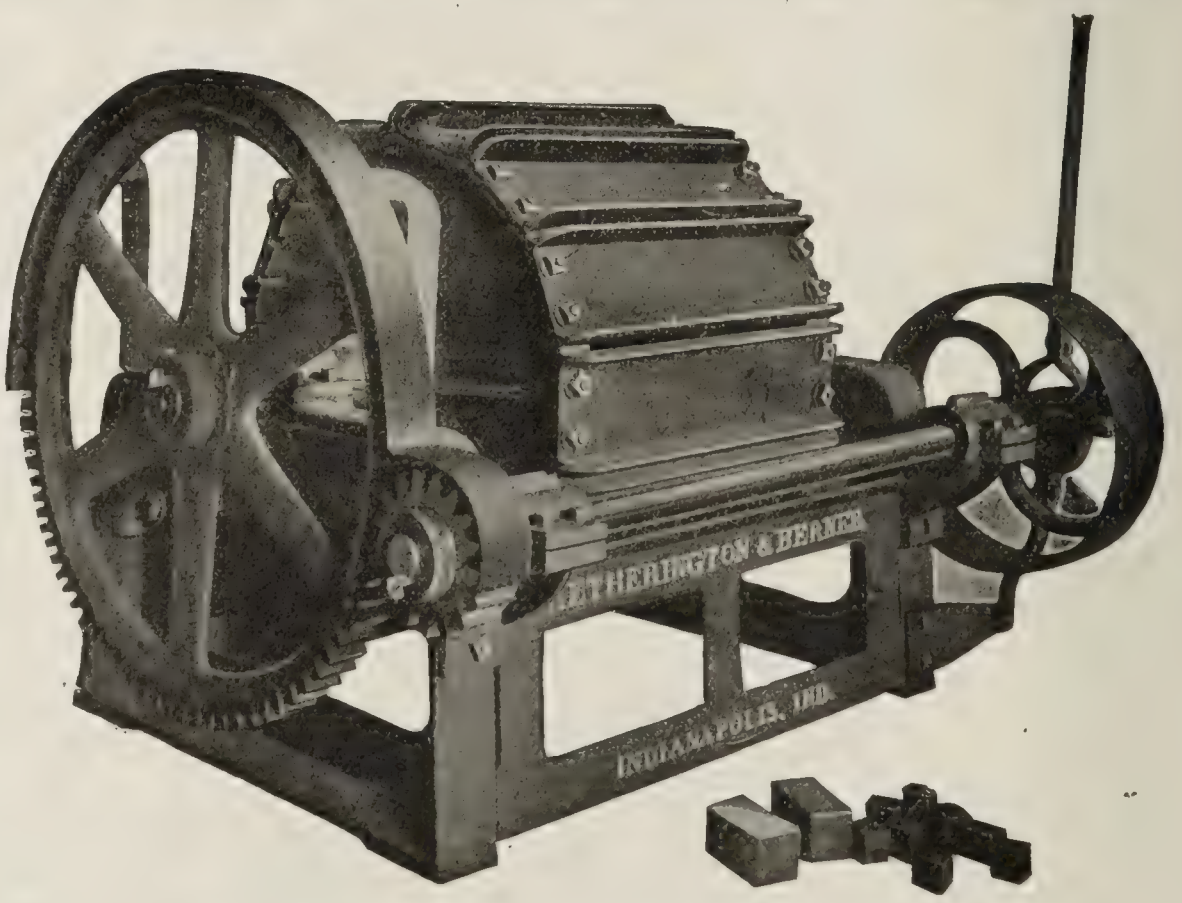
LATEST IMPROVEMENTS

and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

For descriptive circular and prices address

HETHERINGTON & BERNER

INDIANAPOLIS, INDIANA



Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head.	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin.	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Keim Brick & Tile Co.	Louisville	Ohio
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works.	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin.	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head.	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.
United States Roofing Tile Co... Parkersburg ..... W. Va.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Keller Brick Co., The, Cuyahoga Falls, O..... 13

BRICK (COMMON)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton Ill..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Metropolitan Paving Brick Co., Canton, O..... 10

BRICK (FACE)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
American Enamel Brick & Tile Co., New York, N.Y..... 13
Bradford Pressed Brick. Co., Bradford, Pa..... 13
Farr Brick Co., Cleveland, O..... 13
Gethmann Brick Co., Gladbrook, Ia..... 13
Hocking Valley Pro. Co., Columbus, O..... 15
Hydraulic Press Brick Co., St. Louis, Mo..... 13
McArthur Brick Co., McArthur, O..... 12
Ironclay Brick Co., Columbus, O..... 12
Keim Brick & Tile Co., Louisville, O..... 15
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Kimbell Brick Co., S. S., Chicago, Ill..... 13

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill..... 6
Brighton Fire Brick Co., New Brighton, Pa..... 6
Chicago Retort & Fire Brick Co., Chicago, Ill..... 4
Davis Fire Brick Co., Oak Hill, O..... 4
Dover Fire Brick Co., Cleveland, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6
Maurer & Son, H., New York City..... 4
Mexico Brick & Fire Clay Co., Mexico Mo..... 6
Queens Run Fire Brick Co., Lock Haven, Pa..... 4
St. Louis Vit. & Fire Brick Co., St. Louis, Mo..... 6
Jos. Soisson Fire Brick Co., Bolivar, Pa..... 4
Southern Fire Brick & Clay Co., Chicago..... 12

BRICK OR BLOCK (PAVING)
Albion Shale Bk. Co., Albion, Ill..... 8
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Barr Clay Co., Streator, Ill..... 6
Bessemer Limestone Co., Youngstown, O..... 8
Big Four Clay Co., Canton, O..... 8
Carlyle Paving Brick Co., Portsmouth, O..... 10
Danville Brick Co., Danville, Ill..... 10
Deckman-Duty Brick Co., Cleveland, O..... 8
Hamburg Vit. Brick Co., Philadelphia, Pa..... 10
Harris Brick Co., Cincinnati, O..... 8
Hocking Valley Brick Co., Columbus O..... 10
Mayer Brick Co., C. P., Bridgeport, Pa..... 10
Metropolitan Paving Brick Co., Canton, O..... 10
Murphysboro Paving Brick Co., Murphsboro, Ill..... 11
Nelsonville Brick Co., Nelsonville, O..... 8
Purington Paving Brick Co., Galesburg, Ill..... 10
Shawmut Paving Brick Co., Shawmut Pa..... 10
Sterling Brick Co., Olean, N. Y..... 6
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 11
United Brick Co., Conneaut, O..... 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa..... 6

DEALERS
American Clay & Cement Corp., Rochester, N. Y..... 13
Bonner & Marshall Brick Co., Chicago, Ill..... 15
Kimbell Brick Co., S. S., Chicago, Ill..... 13
Globe Brick Co., East Liverpool, O..... 12

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O..... 10

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill..... 13

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa..... 6
Davis Fire Brick Co., Oak Hill, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (ROOFING)
National Roofing Tile Co., Lima, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. **Cleveland, Ohio**

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co., Ltd.
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press. Bk. Co., Indianapolis.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

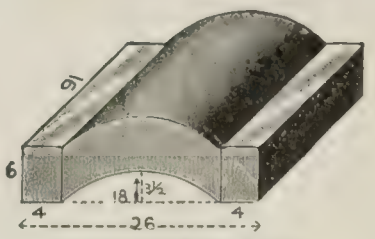
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

Official Directory of
Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

American Ceramic Society—C. W. Parmelee, B. S., Pres., New Brunswick, N. J.; Edward Orton, Jr., E. M., Sec'y, Columbus, Ohio.

American Face Brick Association—Harold W. Holmes, Pres., Detroit, Mich.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—C. A. Millar, Pres., Toronto, Can.; Gordon C. Keith, Toronto, Can.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; Charles T. Harris, Sec., Cleveland, Ohio.

Illinois Clay Manufacturers' Association—D. C. Haeger, Pres., Aurora, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—Eben Rodgers, Pres., Alton, Ill.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—T. B. Martin, Pres., Minneapolis, Minn.; L. G. Rose, Sec'y-Treas., Minneapolis, Minn.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—P. C. G. Gosser, Pres., Coshocton, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, O.

Western Ontario Clayworkers' Association—Alfred Wehlan, Sec'y, Cario, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—John S. Ringle, Pres., Wausau, Wis.; Prof. Samuel Weidman, Sec'y, Madison, Wis.

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

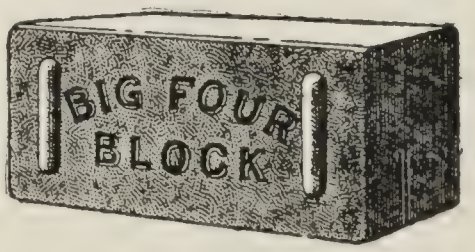
Albion Shale Blocks Stand Test

In Chicago, Milwaukee, St. Louis, Louisville, Indianapolis, Evansville, Terre Haute, and all intermediate cities

Plant Most Modern in Construction and Equipment

ALBION SHALE BRICK COMPANY
ALBION, ILL.

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO
CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick
Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick
Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick
Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost—see Prices Quoted in this Advertisement.

Build with Brick
Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio



The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick
BELDEN BRICK CO.-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

For sale by

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

L. D. BINYON, President
H. L. MATZ, Vice-President
JAS. A. HOGAN, Sec'y and Treas.

S S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory, South River, N. J.
General Office, 1182 Broadway, N. Y.

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

GETHMANN BRICK CO.

Makers of Standard Dry Pressed Face Brick, red in color, both square and round edge.

Also dark colored glazed Face brick.

Samples sent prepaid on request.

GLADBROOK, :: :: IOWA

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.



BRICK HOUSES
And How to Build Them

This book is a complete and clear manual of brick construction, designs and details. It tells what every builder should know of the classification and measurements of brickwork, together with architect's drawings of framing for brick houses and the use of brick veneer.

Up-to-Date and Approved Methods

This book also tells of the miscellaneous uses of brick, including ornamental brick and tile work, chimney and flue construction, brick fireplaces, brick sewers, cisterns and flush tanks, etc. It tells the carpenter and builder everything he should know to undertake brickwork and how to make a success of every job in which brick is used. It is so clearly illustrated by details that there can be no uncertainty in any builder's mind as to each successive step to be taken.

Beautiful Designs Shown

Over sixty designs of the very best modern architectural work are presented in this book. These designs are of attractive, substantial, homelike brick houses of many types. Specifications and working drawings for one of these homes are given in Ideal Homes, August 4th issue of "Brick and Clay Record."

Price, Postpaid, - - - - - - - $1.00

BOOK DEPARTMENT
BRICK AND CLAY RECORD
CHICAGO

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: ***Louisville, O.***

Factory: ***Mapleton, O.***

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

The United States Roofing Tile Co.

ROOFING TILES

Promenade and Floor Tiles

Pure SHALE products of superior quality and patterns.

Two Factories — Prompt Deliveries

GENERAL OFFICE
PARKERSBURG - WEST VIRGINIA

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

ROMACO MORTAR COLORS
ROMACO STUCCO RETARDER

Always Uniform
Strong and Reliable

Manufactured by
THE ROLL MANUFACTURING CO.,
CLEVELAND, O.

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building
Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

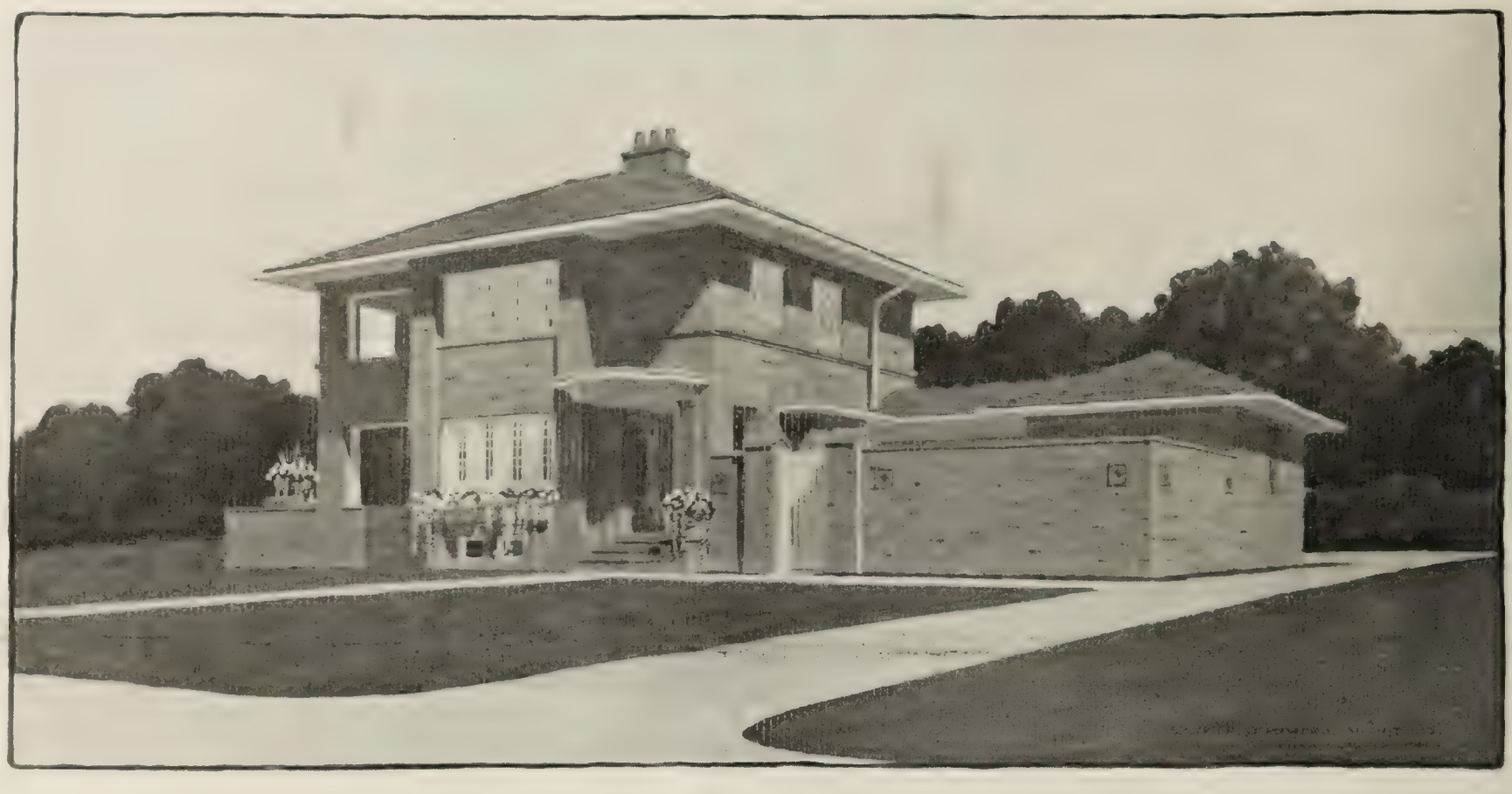
Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations $5.00 Post Free

THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

"BRICK AND CLAY RECORD"
445 Plymouth Court, Chicago



Do You Want to Know What this House Would Cost Built in Your Own Town?

IF YOU ARE A SUBSCRIBER to the Panama-Pacific Clay Products Association, plans and specifications of this house will be sent you, on your assurance that you will secure a bona-fide bid on the house, without the garage, from some reputable contractor.

This bid will be used for purposes of comparison with bids received from other cities, and form a basis for newspaper articles that will show the real cost of building in brick.

THE NAME OF THE CONTRACTOR that you select will be published in the literature that will be distributed at the San Francisco Exposition. He must make his bid on standard forms that will be furnished by the association.

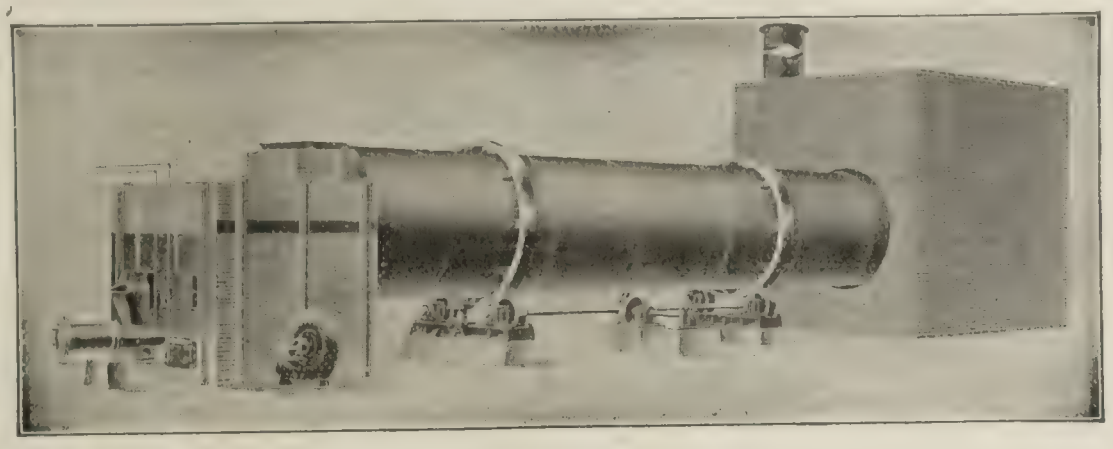
Additional sets of plans and specifications will be furnished, in case it is desired to take competitive bids. Arrangements for these may be made with the Secretary.

You Must Be a Subscriber if You Want Your Contractors to Figure

Make Checks payable to CHARLES BONNER, Treasurer, and mail to Room 1205 Chamber of Commerce, Chicago

Panama-Pacific Clay Products Association

CHICAGO



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

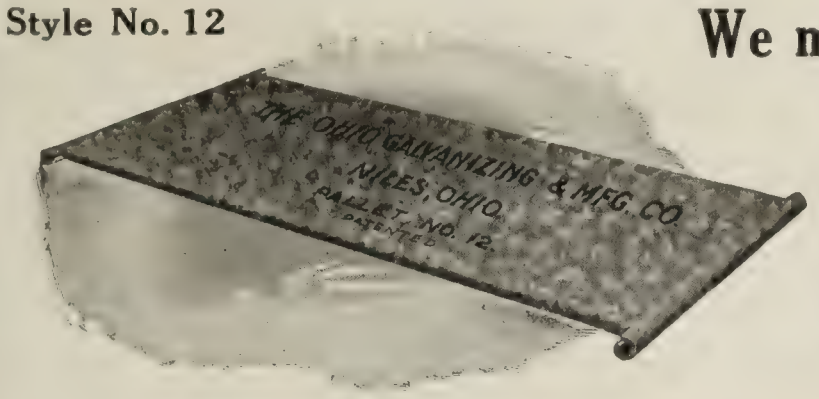
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

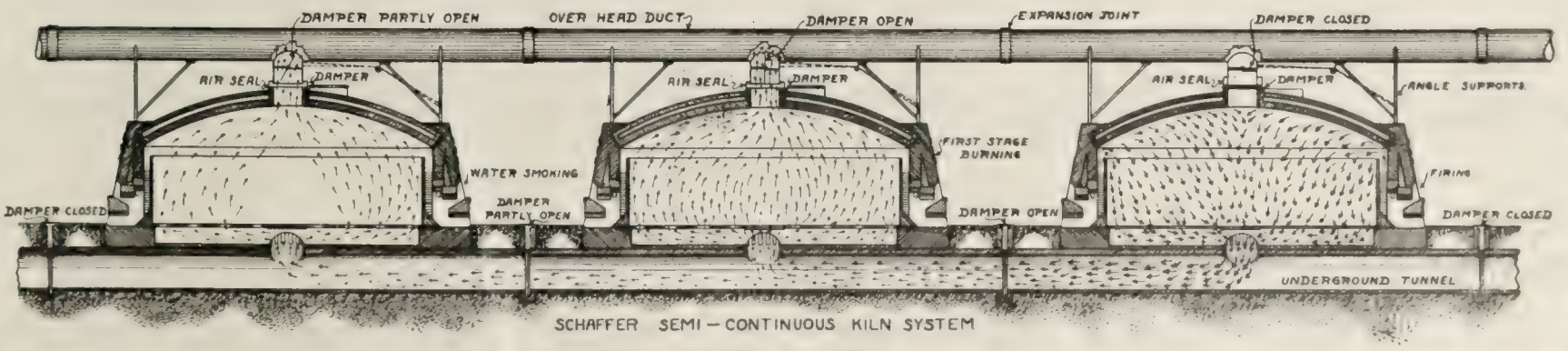
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



SCHAFFER SEMI-CONTINUOUS KILN SYSTEM

Pantent Allowed

"A Man With a Message"
For the Brickman

By this title was Floyd E. Waite heralded after his address at the joint convention of Face Brick Manufacturers and Dealers, held at French Lick, Dec. 8th, 9th and 10th.

Mr. Waite did not appear to the Clay-workers as a "wrecker," but as a "Builder." His talk was constructive.

Not only were the weaknesses and the mistakes in the business of promoting fire resisting materials pointed out—a remedy was offered. And it is a perfectly practical, within-your-reach remedy, too.

A printed copy of this address FREE if you write for it. Read this vital message. It's YOUR business.

Society Advocating Fire Elimination

R. P. STODDARD, *Secretary*

340 Leader-News Bldg. CLEVELAND, OHIO

ANNOUNCEMENT

WE will be at the Statler Hotel, Detroit, during the National Convention, February 15th to 20th, with our method of using Pyrometers, ready and willing to explain its advantages to you, Mr. Reader.

Do not fail to call and see us.

The Frink Pyrometer Company

Home Office
Lancaster, Ohio

Convention Headquarters
Hotel Statler, Detroit

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press	Piano Wire Screens	Wet and Dry Clay Disintegrators
Auger Brick Machines	Dry and Wet Pans	Smooth and Conical Roll Crushers
Down Delivery Tile Mills	Soft Clay Brick Machines	Trucks and Barrows
Oil Burning Equipment	Pug Mills	Kiln Fittings
Crude Oil Engines	Wood Moulds	

If you are in the market for any of the above we will be pleased to quote you.

Catalogs Upon Request

CHICAGO BRICK MACHINERY CO.

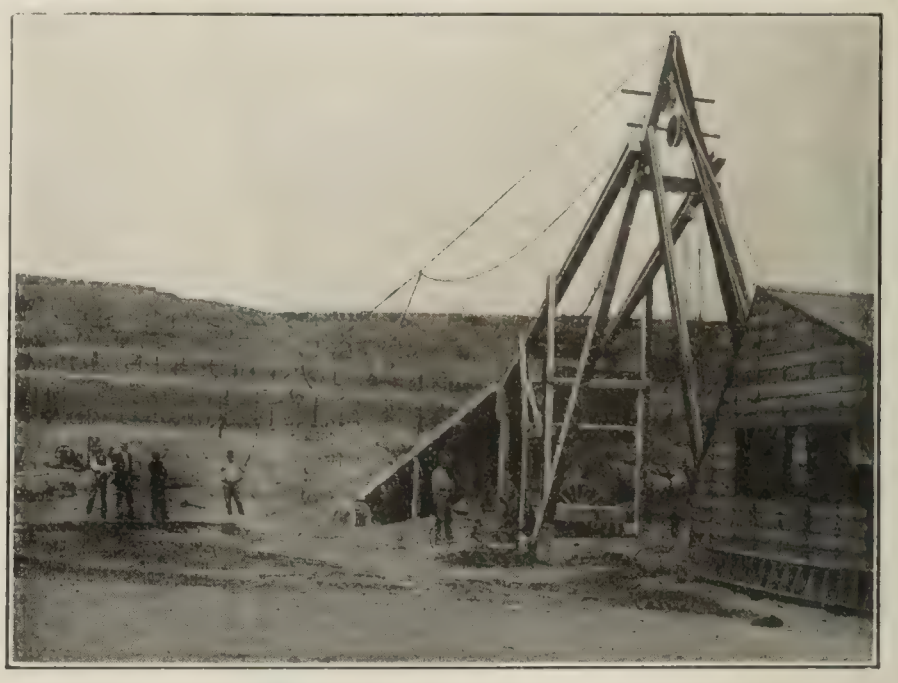
20 W. Jackson Boulevard CHICAGO, ILL.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.
Office and Works: Macon. Georgia

Get Rid of that Old Machinery!

It is idle capital where it stands and the longer it lays there, the less valuable it becomes.

Turn it into real money, while the turning is good. Write up that little ad TODAY and tell us to put it in our classified columns NEXT ISSUE.

Brick and Clay Record **Chicago**

THE ALL 'ROUND BELT

SAWYER



Write for Booklet

SAWYER CANVAS BELTING

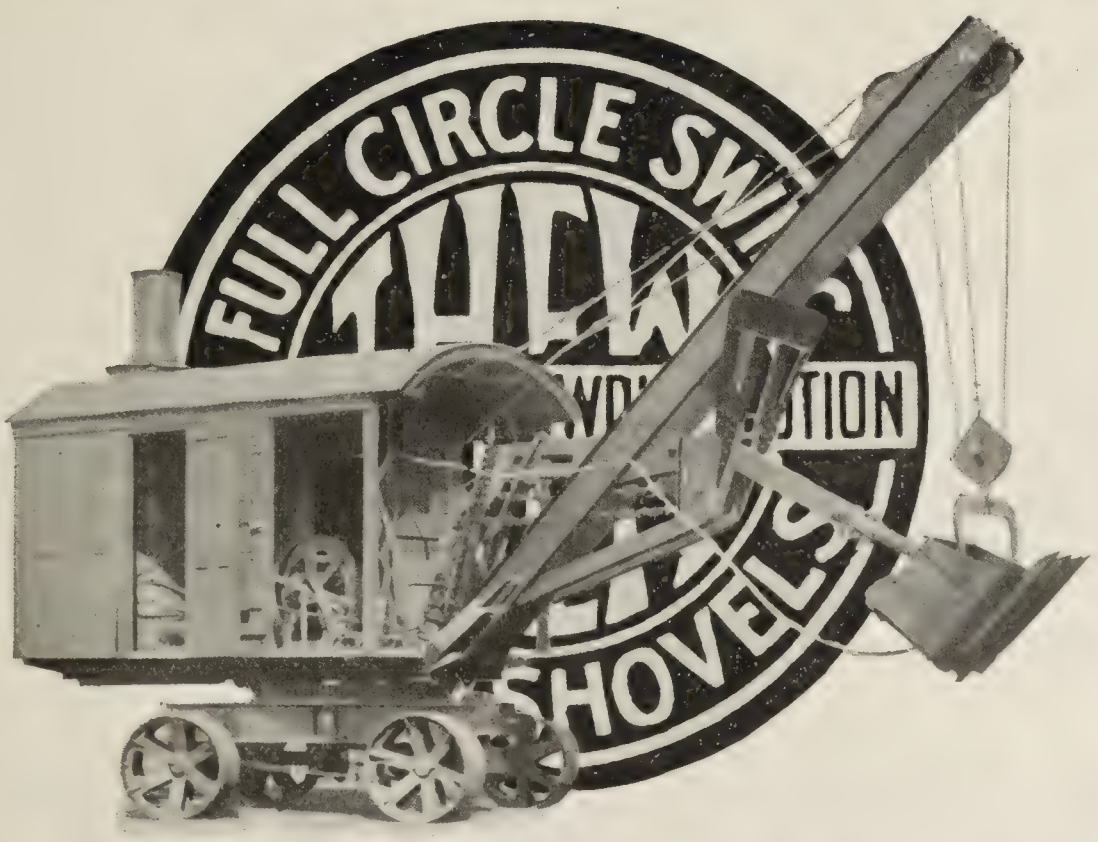
Sawyer Belting Company

Cleveland, O.

SAWYER CANVAS BELTING

The Crowding Motion And The Full Circle Swing

Are Distinctive Features of **Thew Automatic Shovels** Enabling them to handle either shallow or deep cuts successfully and economically and furnishing a prying motion that is particularly effective in shales and fireclay.



Are Cost-Saving Features That Make **Thew Automatic Shovels** The standard for brick yards. **300 Brick Manufacturers** are now using Thew Shovels and will gladly tell you what they are saving with their Thews. Write for Catalogue A and list of Thew Owners near you.

The Thew Automatic Shovel Co., Lorain, Ohio

IF MARKED BREWER IT'S GOOD

Meet Us At Detroit

National Convention
Feb. 15th to 19th

Our Headquarters will be Rooms 316 and 318

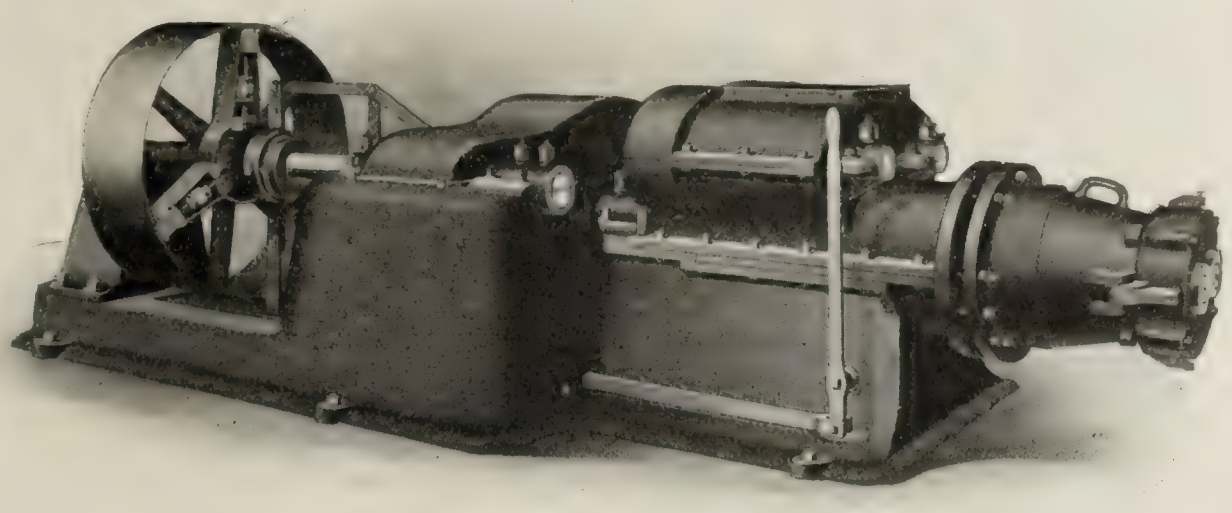
Hotel Statler

Our Representatives::

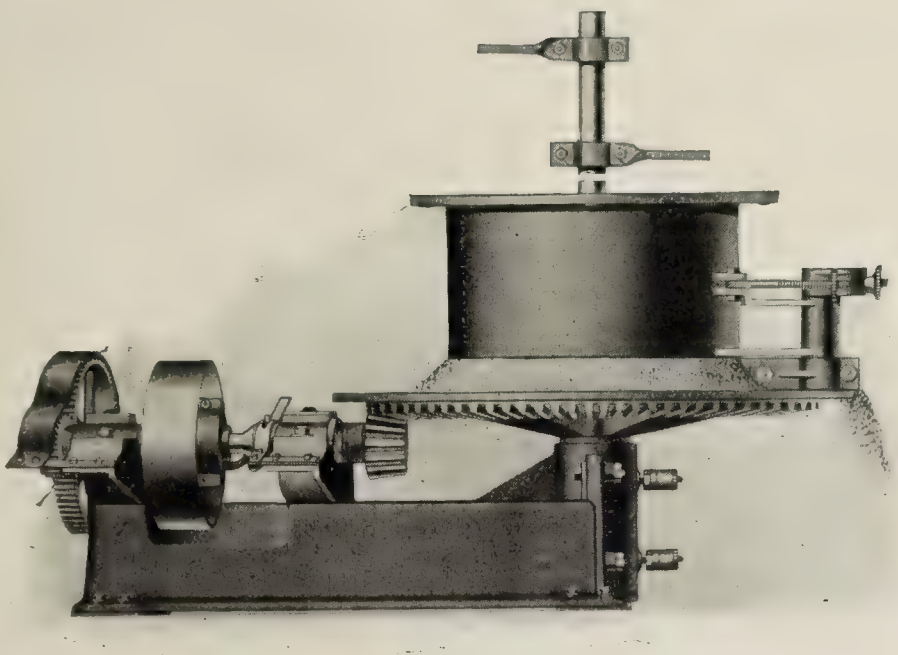
P. W. A. FITZSIMMONS, Button Number 51.
CHAS. BURRIDGE, Button Number 52.
H. R. BREWER, Button Number 53.
G. S. BRUBAKER, Button Number 54.

If in the market for equipment, don't forget the BREWER Line. Remember our *Satisfaction Or No Sale* guarantee. Remember that we work as hard to keep a customer as we do to get one. Call and see us.

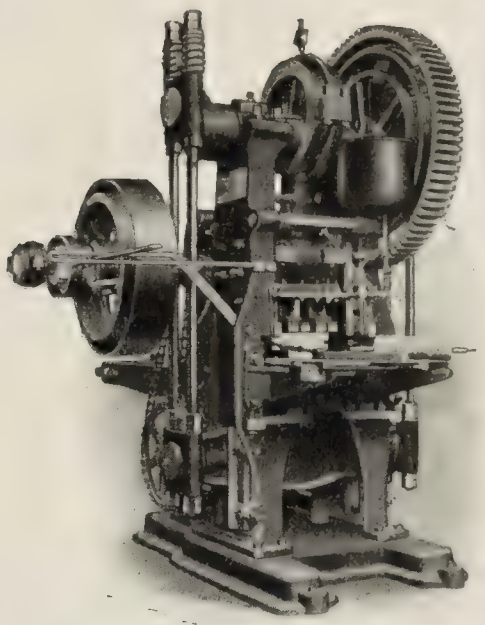
H. BREWER & COMPANY
Tecumseh, Michigan



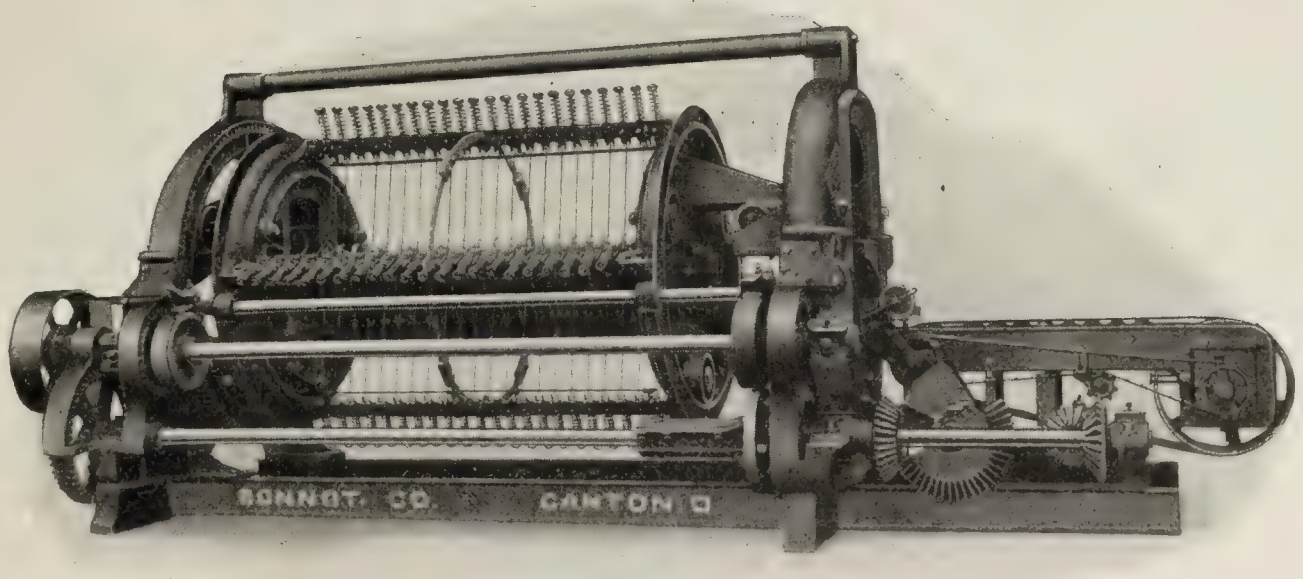
NO. 17 HOLLOW-WARE MACHINE, capacity 100-125 tons per day.



CLAY FEEDER



BONNOT REPRESS



ROTARY AUTOMATIC CUTTING TABLE

THE BONNOT COMPANY

CANTON, OHIO

909 N. Y. Life Bldg.
KANSAS CITY, MO.

211 Higgins Bldg.
LOS ANGELES, CAL.

MEN WHO WATCH

It's not every brickmaker that realizes fully what his repairs actually cost, but the owner who has watched his mechanic repair his machinery—seen him dismantle the machine to lift the shaft and renew the thrust bearing or to replace gears—knows that the cost of repair parts is only a fraction of the expense; that the real expense lies in the loss of time and capacity suffered while putting the repair parts in place.

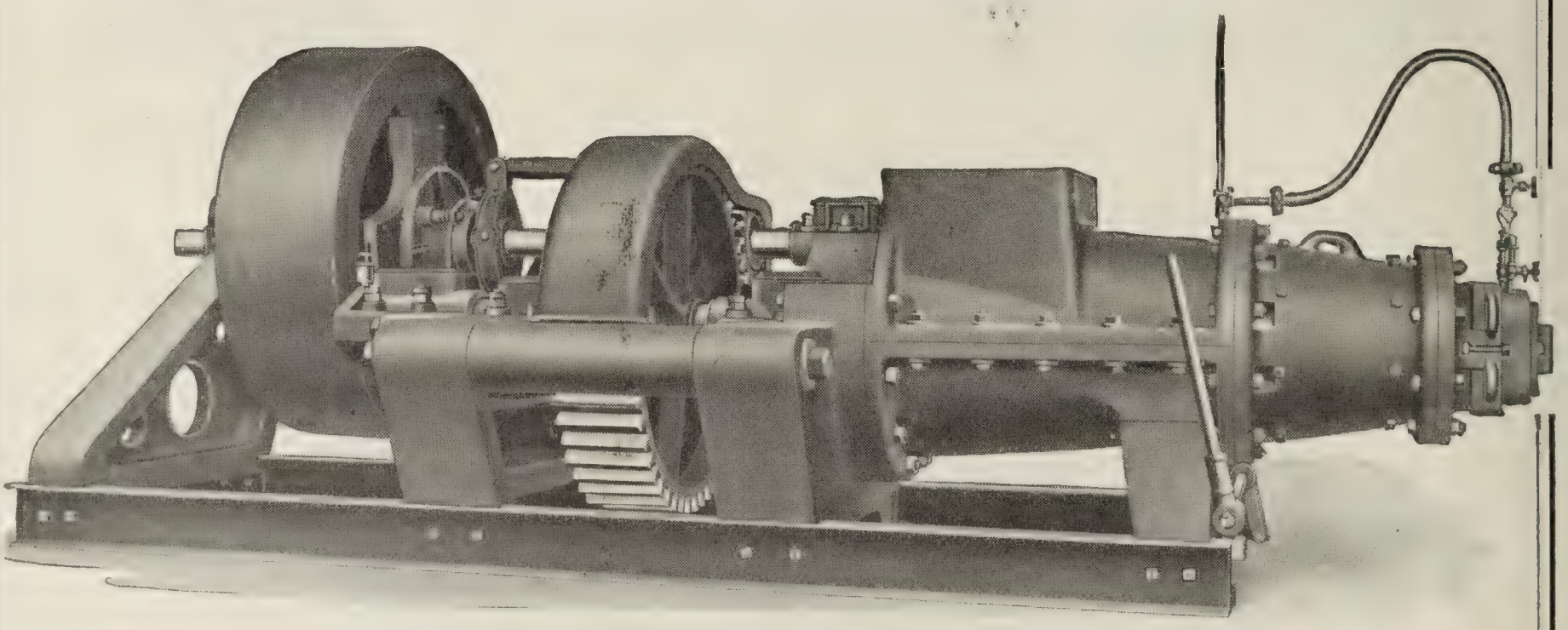
This owner—like his mechanic—knows the value of accessibility in a brick machine. He knows what it means to him—financially and mentally—to have a machine that not only necessitates few shut-downs, but one that can be quickly repaired when repairs are necessary.

THIS IS FOR YOU TO DECIDE:

The GC Machine has but 2 gears, neither running faster than 125 R. P. M.—Is it likely to require as many repairs as a machine with 4 or more gears, some of them running 250 R. P. M.?

It has but two shafts—Could it take as long to repair and re-align as a machine with 3 or more shafts?

It has a detachable thrust bearing that can be removed and renewed without disturbing any other bearing—Isn't this a saving of time as compared to ordinary type of machine?



Model GC Auger Brick Machine

(Is your name in the Book of Smiles—Ask for one at Detroit)

E. M. FREESE AND COMPANY

130 South Street GALION. OHIO

Dependable Machinery of Proven Efficiency

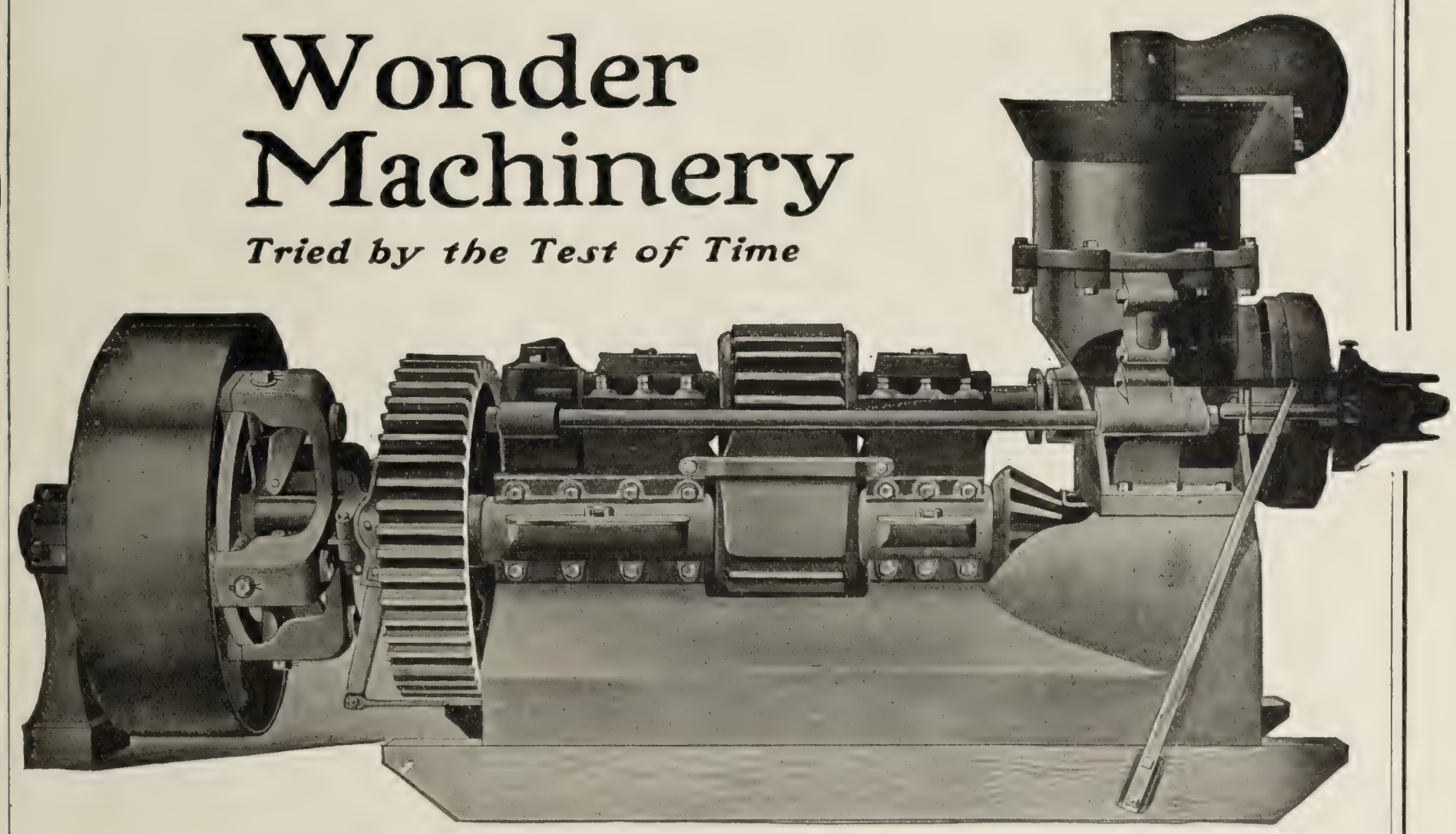
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

This New Rust Special the King of Clay Feeders Cuts Out the Labor of Two Men

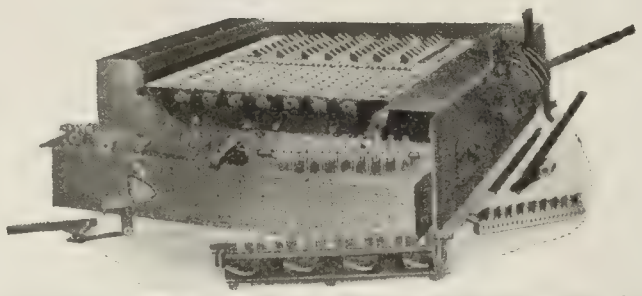
Figure it yourself—see what this means to your Profit-Box at the end of the year.
If you pay $2.25 per day for your hand-feeders at your pug-mill and you require two men to do the feeding—
If there are 300 working days in a year and you run the full year—
Doesn't that mean you are paying $1,350.00 for this service?
The "New Rust Special" knocks out those two men—and besides—well,

Here is What the Rust Will Do in Any Plant:

It will cut out the labor of two men or save you $1,350 a year. This means the "Rust Special" will pay for itself before the year is over and give you an annual profit of nearly $1,000. **It will temper your clay perfectly—improving your product.** Just set the "Rust Special" at the speed you require, gauge your water feed accordingly and leave it alone.
It feeds your clay regularly—speeding up your plant. Determine the capacity at which your pug mill and augur will run to get the highest efficiency, set the "Rust Special" and leave it alone—the feed will not vary 10 brick per hour.
This means that you will get the best out of your dry pan, your pug mill and your auger and insure a regular delivery to your off-bearers, who speed up and give you more efficiency in the work performed.

Don't be penny-wise and dollar foolish! If the cobbler was making your shoes by hand today as he was twenty years ago, you'd be paying $15 for a pair you can get today for $3.
Speed up your plant—cut out hand-labor wherever you can—and let **machinery** do the work!

The "Shear-Klean" Grate —Saves Fuel—Saves Waste—Eliminates All Clinkers



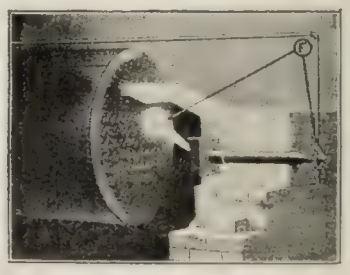
We have a special book on "Boiler Efficiency" and the information it contains is worth your while having even if you never buy a "Shear-Klean" grate. It is sent you free.

This grate is especially adapted for burning low-grade "clinkering" coal, especially slack or screenings—and it burns them so effectually that it makes them give a full day's run, without cleaning through the fire doors.
Its working principle is such that the fireman can handle and control his fires WITHOUT THE USE OF SLICE BAR OR POKER.
At plants using the SHEAR-KLEAN there is no in-rush of cold air to chill the walls and fire-bed—interrupt the distillation of gases, and reduce the temperature of the furnace.
You know as well as we, that OPEN FIRE DOORS CAUSE LEAKY FLUES—producing smoke, waste heat, and lower steam pressure. The SHEAR-KLEAN prevents these wastes.

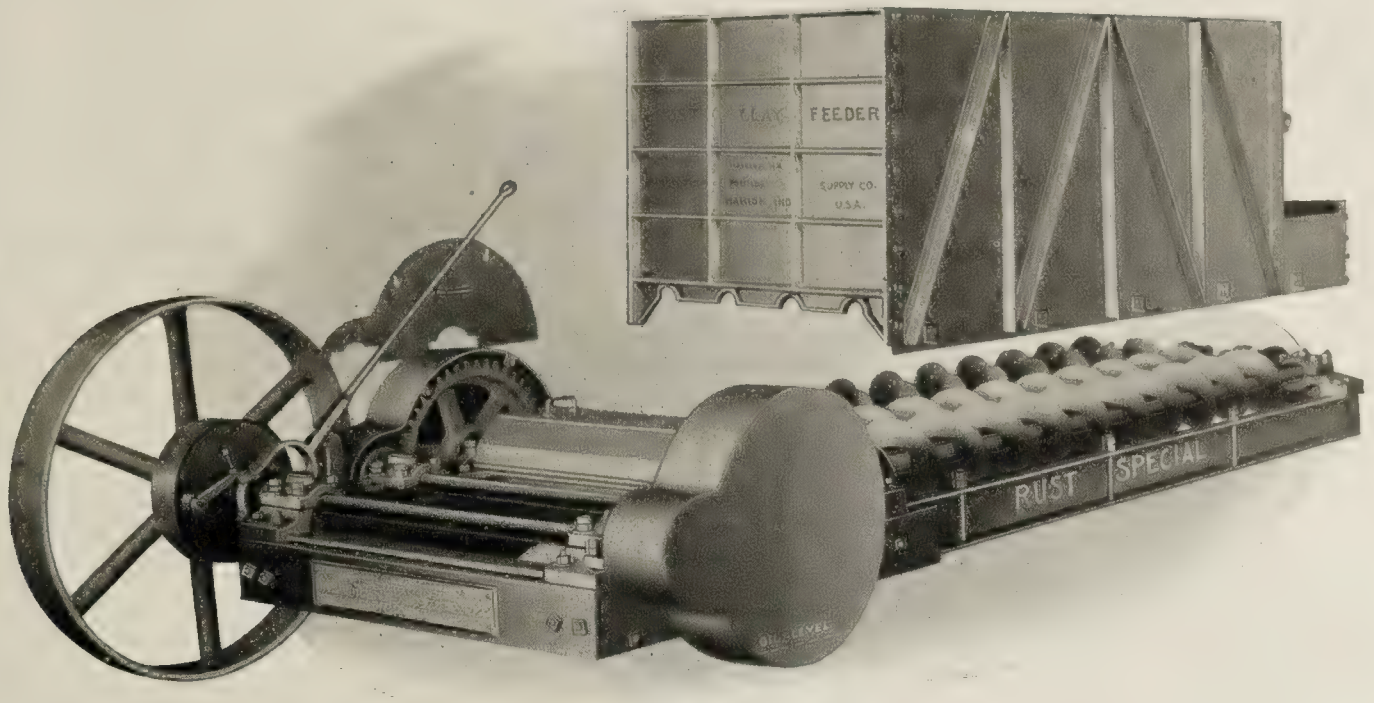
The Marion Rotary Soot Blower

Prolongs Life of Your Boiler

The Marion Flue Blower is a permanent fixture in the rear wall of the boiler opposite center of flue space and by its use the life of a boiler is prolonged by keeping the soot from the tubes.
Soot, if permitted to remain on the tubes, precipitates acid, causing corrosion, and the accumulation of soot causes a great loss of fuel.
With the Marion Flue Blower the soot is blown in direction of the natural draft out through the chimney, cleaning the boiler while in commission, thereby avoiding strains which occur in old method of opening front of boiler, causing flues and seams to leak.



We have so much confidence in the Marion Flue Blower we are willing to ship it anywhere on a 30-day Free Trial. If it fails to do all we claim for it, ship it back and we will refund freight charges.



Five New Points in the NEW Rust

1: There is no exposed gearing. Every gear runs in oil, carefully housed from the dirt and grime, and insures full efficiency of your machine and removes danger of accidents.

2: The eight gears that drive the spirals—These are also housed in oil and are made of the highest grade crucible steel.

3: The large gearing: This is made of semi steel, built doubly heavy for any duty that may be demanded of it.

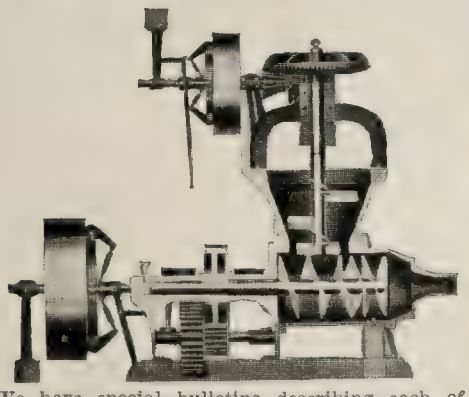
4: The drop bottom: This is hinged at the center and permits the operator to drop out the material under any two of the spirals and reach them quickly.

5: The four spirals shafts: These are built extra large and strong and increase capacity of the "Rust" more than 50 per cent.

The New Rust Special is a Big Producer---

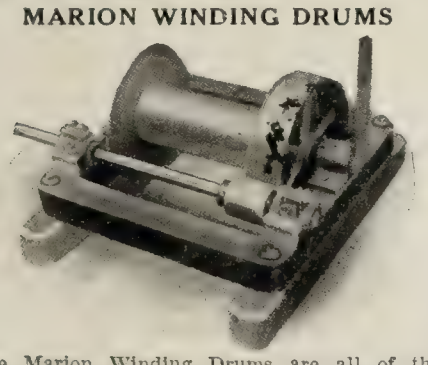
It is the last thing in clayfeeders. It has all the good things that "Rust" Clayfeeders have had for the ten years they have been on the market, with the new features that make it the "Efficient" clayfeeder.
It is made extra heavy for hard work and big production. Its gears are encased. They run in oil. They are made either of semi-steel or high grade crucible steel. Its spirals are heavier than other types. And, besides it has larger capacity.
We have a special bulletin describing in detail all the features of the "Rust Special" and the smaller size feeders. Let us send you a copy—it does not place you under any obligations.

The Marion Brick and Tile Machines Do Their Work in the Marion Way



We have special bulletins describing each of the Marion Models and will be pleased to send a free copy to anyone.

MARION WINDING DRUMS



The Marion Winding Drums are all of the self-contained friction type. They are strongly made. One lever operates the friction pulley and the brake which keeps the car, loaded or unloaded, under perfect control of the operator.

There are six leaders in the Marion Line of "Eli" Brick and Tile Machines—each designed to give the maximum of service at the minimum of cost.
These come with the upright puggers and with the square hoppers.
Their capacity runs from 12,000 brick or 5,000 to 8,000 three-inch tile to 100,000 brick per 10 hours.

Investigate—Get the Facts Before You Buy

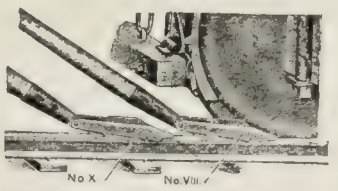
We court competition, because we know what the Marion Line will do.
So we say: "Get The Facts; Investigate!" You can have all the information you want about any of the Marion Machines for the asking.

Send for a FREE Marion Book

Tear off the coupon at the right—Check off the book you want or all of them and we will send you a copy free by return mail, and don't forget "Efficiency," the big book that shows you how to save money in your boiler room.

Marion Machine, Foundry & Supply Co.
Marion, Ind.

MARION ATLAS CAR MOVER



This device is the most simple and most practical car mover on the market.

Mail Coupon Today

Marion Machine, Fdry & Supply Co.,
Marion: Indiana

Send the free booklet we have checked off below:

Rust Special Clay Feeders. ☐
Shear-Klean Grates ..... ☐
Rotary Soot Blower..... ☐
Brick and Tile Machines . ☐
Winding Drums..... ☐
Atlas Car Movers..... ☐

(Signed) .....
(Street) .....
(City) .....
(State) .....

KING MIDAS

Had he owned and operated a Paving Brick Plant, or any other kind of clay products plant, at the time he received his proverbial golden touch, he would not have had to exercise his power, if he had operated a Powell Patented Shale or Clay Planer.

The remarkable saving in cost of getting in shale or clay, would doubtless have satisfied Midas, so that he would have put his touch on some other part of the plant other than the bank.

Know the Arbuckle first



For proof of the above statement, ask the man who operates one.

Having his raw material **cut up into fine pieces** and **automatically loaded into cars** for haulage to storage bin, at a very **small cost per ton,** is an item which would be very much appreciated by most manufacturers.

Advantages which follow the above results are: **Reduction of wear and tear on Dry Pan from one-half to three-quarters; the saving of all pit laborers, with the exception of one,** who is required to operate the Planer; **a perfect mixture of the bank from top to bottom;** a saving of all explosives formerly used; **increased capacity** and **better product.** These are also items which the manufacturer would appreciate.

The Goose that laid the golden egg every day "did not have anything on" the Powell Patented Shale and Clay Planer; built in sizes to handle your proposition from a two-foot surface clay bank to a hard shale bank 100 feet high. Any capacity delivered that is required.

Correspondence Solicited.

ARBUCKLE & COMPANY

EXCLUSIVE MANUFACTURERS

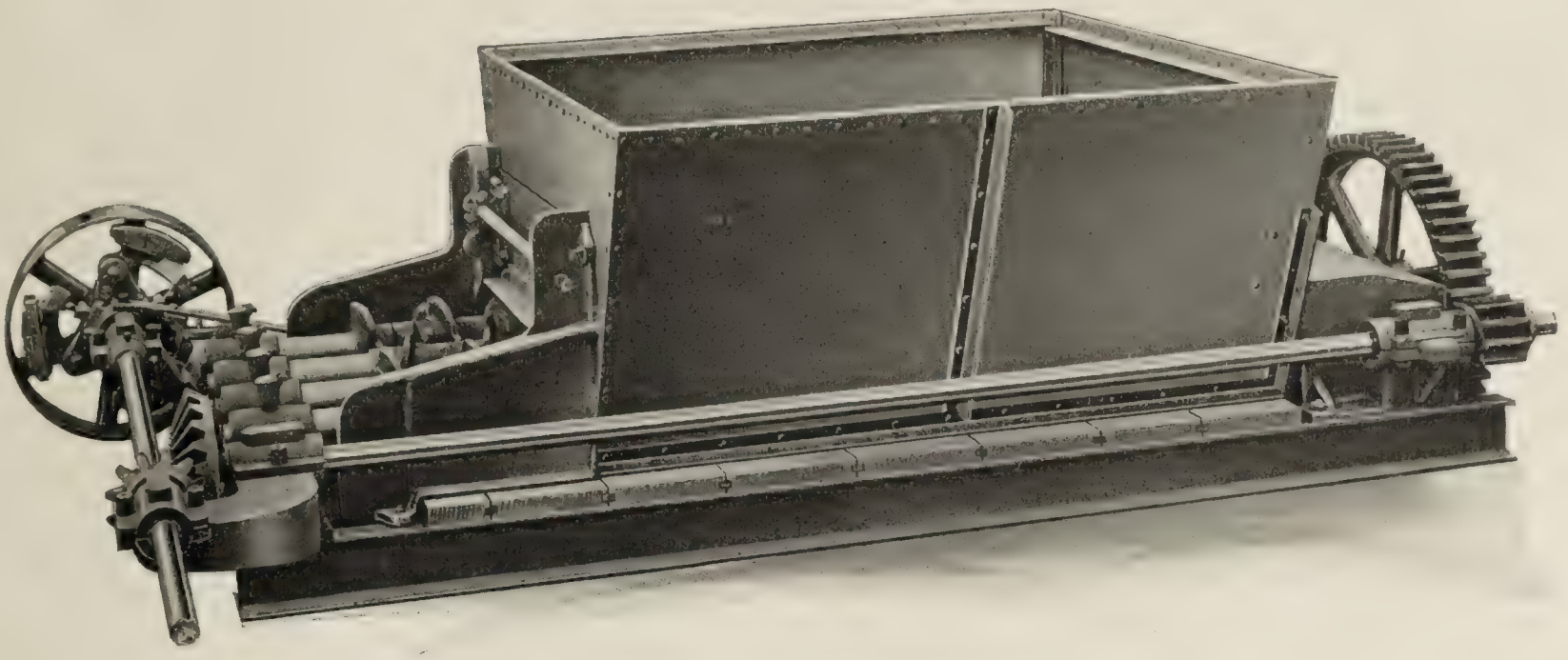
Rushville, Indiana, U. S. A.

Infringements will be promptly and vigorously prosecuted

ONE Brick Machine may look as good as another, may be built first class mechanically and of ample weight, and still prove a disappointment.

It is the hidden effort and experience back of the Steele Machinery which give the results.

A proper relation of parts makes the difference between the finished and easy output of the Steele Machinery and the labored effort of improperly designed machinery.



The Steele Even Feeder is extra heavy—weighing 6500 pounds—at the same time it is so well balanced that it requires very little power. The connecting gears are spur type and run in oil.

These Feeders are giving good results where others failed.

J. C. STEELE & SONS

STATESVILLE, N. C.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany all orders.

WANTED—HELP.

WANTED—Experienced man for general manager of brick, fireproofing and pottery plant. Must acquire interest, part cash, balance easy terms. Exceptional opportunity. Address: 2-R, care of "Brick and Clay Record". 2-1P

WANTED—First-class salesman, also to manage sales department for an established manufacturer of roofing tile. State salary expected. Address: 1-BD, care of "Brick and Clay Record." 1-2-2

WANTED — Experienced superintendent for sand-mold brick plant in Wisconsin. Address: The Excelsior Brick Co., Menomonie, Wis. 12-2-3P.

WANTED—Experienced sewer pipe salesman for yard trade. Address: 2-M, care of "Brick and Clay Record". 2-1P

WANTED—POSITIONS.

POSITION WANTED—Gentleman now occupying position as general manager and sales manager of modern brick and hollow tile plant, is desirous of securing similar position, particularly general sales manager, on the Pacific Coast, California preferred. Unexceptional qualifications, business ability and personal references unquestionably satisfactory. Must be a good going concern. Address: 1-C, care of "Brick and Clay Record." 1-4.

WANTED—Position as superintendent or foreman in plant manufacturing face, paving or hollowware, by a thoroughly practical man and machinist, who fully understands brick machinery and burning, also the handling of labor to get results. Capable of installing new up-to-date plants. Strictly temperate; can furnish A-1 references. Address: 2-D, care of "Brick and Clay Record". 2-1

WANTED—Position by first-class superintendent with 20 years' practical and theoretical experience, to take complete charge of up-to-date brick and fire brick plant. Thoroughly competent and reliable. A-1 references. Address: 2-A, care of "Brick and Clay Record". 2-1

POSITION WANTED—Thorough expert of clay manufacturing line wants position with good company. Good references and will accept reasonable salary. Address: 2-P, care of "Brick and Clay Record". 2-1P

POSITION WANTED—As superintendent, fire, paving, building or common brick, all processes and kilns. Clay or shale. Can take entire charge. Address: 2-H, care of "Brick and Clay Record". 2-1P

WANTED—By capable, experienced man, now engaged, position as superintendent of brick plant. Pacific Coast preferred. References. Address: 1-X, care of "Brick and Clay Record." 1-TF.

WANTED—Position as manager or superintendent of clay plant, Ceramic engineer, thoroughly experienced. Paving or face brick preferred. Best references. Address: 2-L, care of "Brick and Clay Record". 2-1P

POSITION WANTED—By experienced setter and burner, or to superintend plant—stiff-mud preferred. Samuel A. Hedgecock, Fountaine, Va. 2-1P

WANTED—Position as superintendent of brick plant. Expert burner with coal, oil or gas. Dave Oliver, Cherryvale, Kan. 2-1P

POSITION WANTED—Man of Norwegian birth, 42 years old, strictly temperate, wants position with roofing tile, drain tile, fire brick, paving brick or common brick concern. Has had three years' experience in Norway as superintendent, and has also served as superintendent for a number of years in United States. Technical education received in Lrubein, Germany, in civil engineering and ceramics. For 15 years has been associated with clay industry and has had wide experience in the construction and operation of down-draft and continuous kilns. Address: 2-C, care of "Brick and Clay Record". 2-1

WANTED—Position with paving brick company. Man capable of marketing and manufacturing. Thorough, practical experience in all branches, including burning. Strictly sober. Gilt edge reference. Address: 2-G, care of "Brick and Clay Record". 2-1P

WANTED—Position as superintendent of clay drain tile or brick plant by practical man who can produce results. Twenty-five years' experience. Address: A. O. Martin, Lynn, Ind. 2-1P

WANTED—SECOND-HAND MACHINERY.

WANTED—50 second-hand dryer cars for drain tile. Address: Angerer Clay Product Co., Scofield, Mich. 2-1P

WANTED—Dry pan. State size, make, price; all particulars first letter. H. O. Robinson, Green Ridge, N. Y. 2-1

WANTED—15,000 wooden pallets, good condition. Address: Box 130, Laredo, Tex. 2-1P

WANTED—75 double-deck cars, 24-inch gauge. Weston Brick Works, Weston, W. Va. 2-1P

FOR SALE—CLAYWORKING PLANTS.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

—

—

—

—

FOR SALE—The Ashaway National Bank will sell a controlling interest in the capital stock of the Ashaway Clay Co. for a nominal sum. The plant was built in 1907 and cost about $70,000. On account of lack of experience and capital, it has never run, all told, a full year. The company has just been reorganized with a capital of $35,000 and no debt. It is a thoroughly modern and up-to-date plant with new equipment throughout, consisting of Freese intermediate size brick machine, capacity up to 60,000 brick per day, disintegrator for preparing the clay, Corliss engine with high pressure boilers, waste heat dryer, direct connecting fan and steam coils for auxiliary heater, 25-chamber Haigh continuous kiln with stack 135 ft. in height The equipment for handling clay from the bank consists of tramway and cars with elevated track at plant and winding drum to hoist cars. There is a switch into the plant with depressed track for loading. Ashaway National Bank, Ashaway, R. I. 1-3.

—

—

—

—

FOR SALE—Whole or half interest, Raymond stiff-mud 20,000 capacity brick plant, located in growing town, three railroads. Shale supply unlimited, making fine red builders, face and pavers. Good local and shipping market. Owners not brick men and in other business. Bargain for right man. Address: Daniel Troy, 245 So. 4th St., Raton, N. M. 2-2P

BIG BARGAIN—Brick and tile plant, Oberlin, O., 30,000 capacity mill, Bensing automatic brick and tile cutter, gas engine and gas well, 3-story building, 30x60; 28 ft. kiln, all in good condition. Large home demand for brick and tile. It will bear investigating. J. N. Stone, Treas., Oberlin, O. 2-1

FOR SALE—Brick plant with a well established business located in the corn belt, where business conditions are good. There is a fine outlook for business the coming year. Best of reasons for selling. Price and terms right. Address: 2-E, care of "Brick and Clay Record". 2-1

FOR SALE—Brick and tile plant in town of six thousand, location of State Agricultural College. Soft or stiff-mud, open yard for brick, good dry sheds, kilns for tile all in good condition. Fifteen thousand dollar plant for ten thousand dollars. Address: W. C. Corbett, Corvallis, Ore. 1-3-P.

FOR SALE—Large brick and tile plant, doing good business, well located on two railroads. Fine quality of clay—own our own clay beds. For particulars address: 1-B, care of "Brick and Clay Record." 1-2X.

FOR SALE—Entire tile plant, everything good condition. Drying capacity 100,000 tile. Cannot supply demand. Address: Paulding Clay Works, Paulding, Ohio. 1-2-3P

FOR SALE—Brick plant, 40,000 capacity, at a bargain. Near Eufaula, Ala., on the Georgia side of the river. Plenty of clay. A. J. Baldwin, Dawson, Ga. 2-1

SPECIAL OPENING.

OPENING—The owners of enormous deposit of finest red shale desire to interest parties in establishment of hollowware plant on same. Unequaled for sewer pipe, tile, etc. Brick plant now in operation on property. Chas. H. Stone, Winston-Salem, N. C. 2-2

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—Sand-lime brick plant complete. Capacity: 30,000 daily. Five and a half acres of good sand, close to Chicago. Running on advanced orders. John J. Moroney & Co., 20 W. Jackson St., Chicago, Ill. 2-1

"THEW" STEAM SHOVEL FOR SALE—No. 0, weighing about 15 tons, with ⅝ yd. dipper; on traction wheels. Modern and good. Big bargain for quick buyer. Have 25 others, up to 5 yd. Also locomotives and cars.
WM. B. GRIMSHAW CO.,
690 Drexel Bldg. Philadelphia, Pa. 2-1

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

FOR SALE—Practically new: brick and tile machinery, boilers, engine; Standard steam dryer, and cars. Address: W. E. Lyon & Co., Carthage, Ill. 2-2-TF

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo. 3-1tf.

FOR SALE VERY CHEAP—About 15,000 wooden pallets, in good condition. Address: 2-B, care of "Brick and Clay Record". 2-2

FOR SALE—25 H.P. steam engine, Fate brick and tile machine, 2-roll clay crusher, hand power brick cutting table. A. F. Potter, Clintonville, O. 3-2

FOR SALE—One 5-B Madden brick and tile machine, in first-class shape. Clay Products Co., Earl Park, Ind. 2-2

Brick and Clay Record Classified Ads Are Result Producers

EQUIPMENT FOR SAND LIME AND CLAY BRICK PLANTS FOR SALE.

Six 6 ft. x 75 ft. dryer cylinders, 150 lb. steam.
Two hundred brick cars.
One 6 ft. x 50 ft. direct heat sand dryer.
Three 5 ft. x 22 ft. Abbe tube mills.
Five 4-mold Boyd brick presses.
Ten 8 ft. Stephens-Adamson mixers.
One 30 in. x 30 ft. belt conveyor.
One 24 in. x 50 ft. belt conveyor.
Four bucket elevators.
One No. 1 Sturtevant mill.
Complete plant for sale, at South River, N. J.
Also includes pumps, boilers, engines, rail, piping, pulleys, shafting, hangers, crushers, dump cars.
Send for complete list and prices which are exceptionally low.

WICKES BROTHERS,
Claremont & West Side Aves.,
Jersey City, N. J. 1-4.

FOR SALE—A 4-mold Boyd dry press, good as new. Has seen very little service. Auburn Shale Brick Co., Auburn, Pa. 2-1

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,

PARK BLDG. PITTSBURGH, PA.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

EQUIPMENT SNAPS—Machine tools in perfect operative condition and equipment in stock for immediate shipment at big money savings.
20 in. x 12 in. Blake Jaw Stone Crusher.
4,000-lb. capacity Otis Power Freight Elevator.
35 H.P. Pierce Horizontal Gasoline Engine.
18½ in. 12 in. x 10 in. Worthington Duplex Steam Pump.
10 in. x 6 in. x 10 in. Blake Duplex Steam Pump.
50 H.P. Bullock—220 V., 3 ph., 60 cy. Motor.
20 H.P. G. E.—220 V., 3 ph., 60 cy. Motor.
4 yd. 2 side Western Dump Cars, 36 in. Ga.
Structural Steel, Lumber and Heavy Timbers, Pulleys, Shafting, Belting, Pipe, Roofing, Paint; in fact, material of every kind in tremendous quantities always in stock. Best service and lowest prices. Get in touch with us today.
Address: HARRIS BROS. COMPANY, Owners, CHICAGO HOUSE WRECKING CO., 35th and Iron Streets, Chicago.

FOR SALE—Down delivery attachment for Fate machine for making large sizes tile. Scarcely used and a bargain. Carlinville Clay Co., Carlinville, Ill. 11-2TF

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

MISCELLANEOUS.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

RAILS

SMALL ORDERS GIVEN SPECIAL ATTENTION

40, 56, 60, 70, 75, 80, 85 & 90 lb.

RELAYING RAILS
FOR SIDINGS, SPURS, ETC.

8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.

NEW STEEL RAILS
FROGS AND SWITCHES

SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment

RICHARDSON & CO., INC.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

Gold In Exchange for Old Iron.

NO, we are not going into the junk business. We are going to get a buyer for those machines you have standing around in the way, rusting and getting out of date. A properly worded "AD" sent to us on or before the 10th or 25th of each month will surprise you by the quick returns you get.

If you want to sell, buy or exchange an engine, pump, pug-mill, dry pan, die, repress, clay lands or factory—if you want an expert burner, fireman or engineer—if you want a position, we will tell thousands of people just exactly what you want and it will cost you but 8 cents per word.

Look over the Classified Section in this issue. Note the varied opportunities. Your particular requirements may not be fulfilled. If not, write a short spicy "AD" and send it to us in time for next issue.

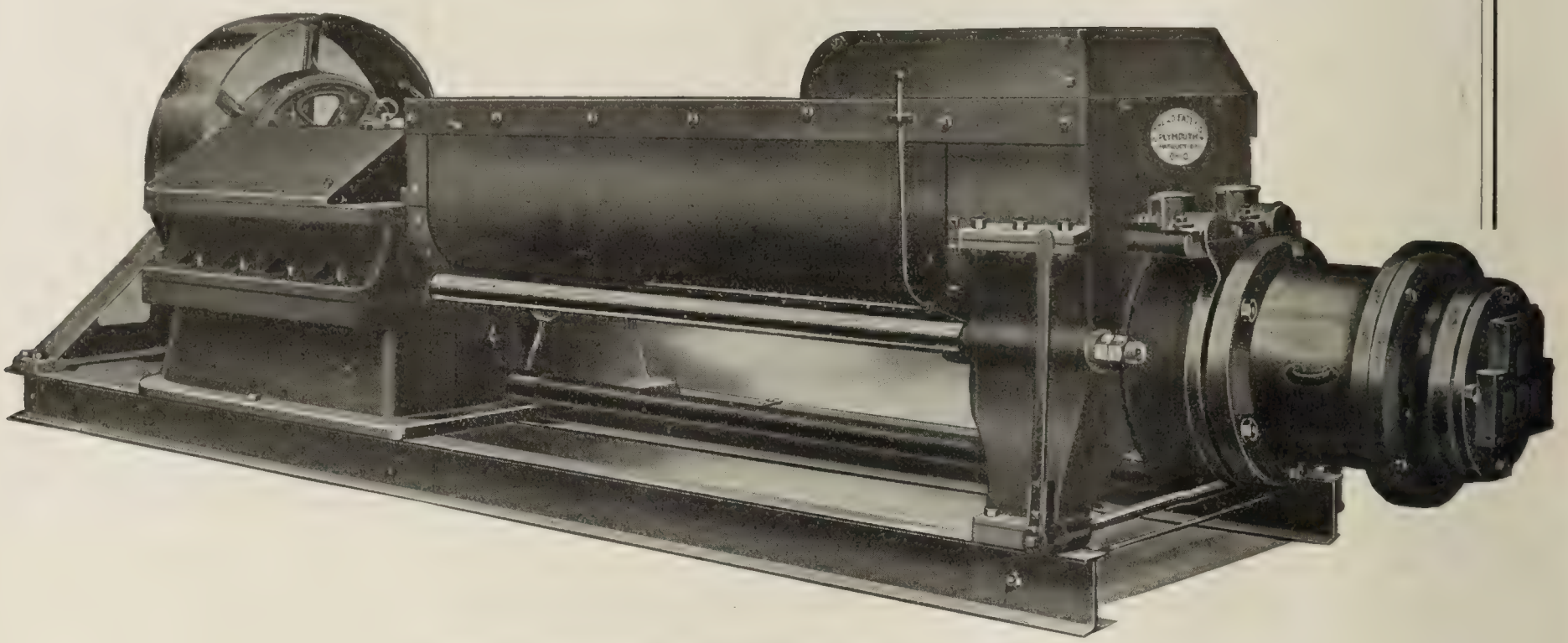
BRICK AND CLAY RECORD

445 Plymouth Court, CHICAGO, ILL.

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

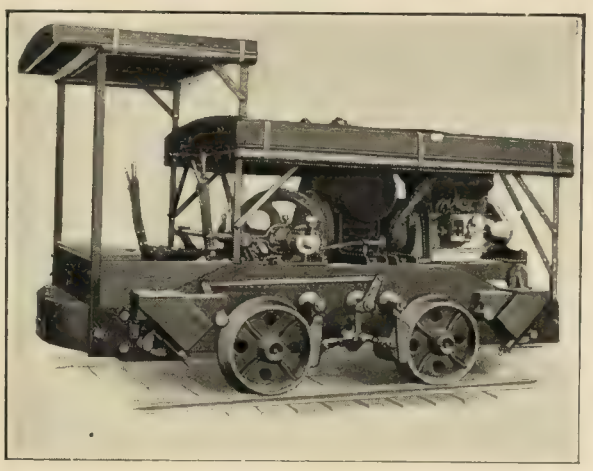
The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.





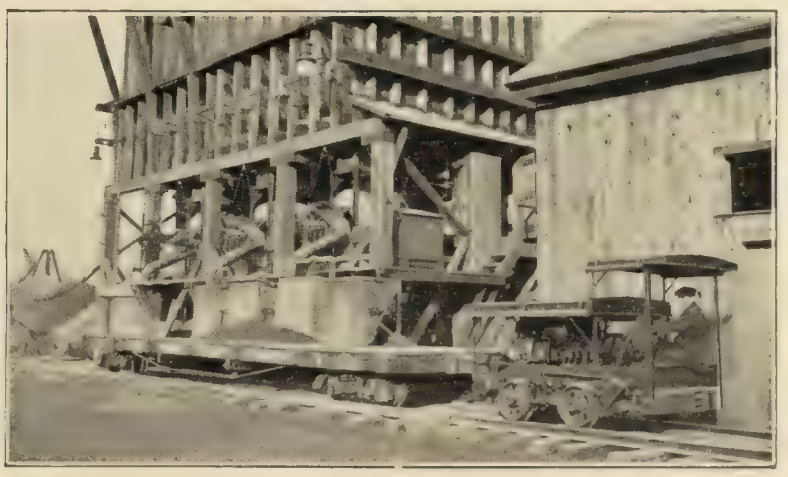


Plymouth Gasoline
Industrial Locomotives

Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.





The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight year old boy who runs one.

The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geljsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative

The "TECKTONIUS-VOGT" Kiln

Superiority

Viz.

Efficiency --- Endurance --- Economy

IF YOU ARE SEEKING A KILN

that will save you Time, Fuel and Labor, of Watersmoking, Burning and Cooling,

IF YOU WANT A KILN

that will turn out from 95 to 100 per cent perfect ware every time,

IF YOU CONTEMPLATE BUILDING A KILN

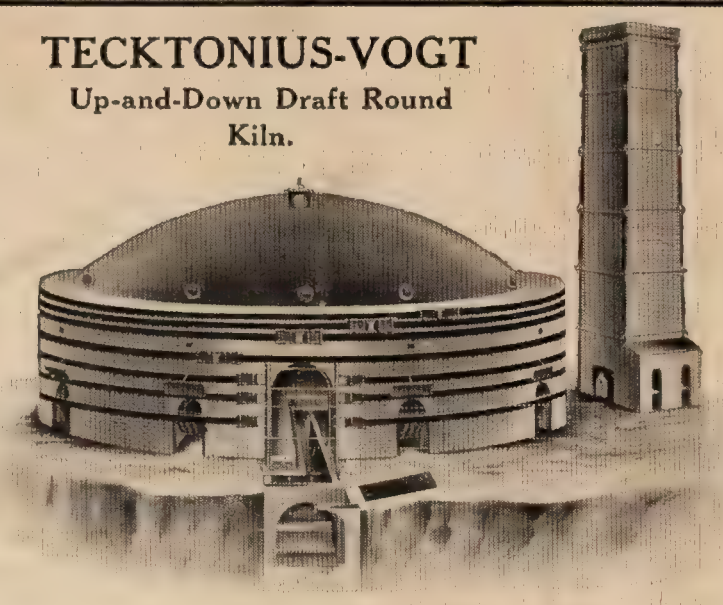
that will eliminate the danger of unequal expansion and contraction of the walls, which causes the crown to crack or buckle,

THEN INSTALL

The "Tecktonius-Vogt" Up-and-Down Draft Kiln.

TECKTONIUS-VOGT

Up-and-Down Draft Round Kiln.



SPECIAL PATENTED FEATURES.

Auxiliary Fire Furnace Used in water-smoking. Heats underground flues at each end of open tunnel—part of heat ascending through opening in center and allowing moisture to escape through hole in crown with up-draft.

Solid Grate Fire Furnace Burns finer and cheaper coal without waste. Makes most effective coking table. Creates intense oxidizing heat. Easiest regulated, most economical firing furnace in existence.

Stack Damper Control Convenient counter-weight draft in stack gives perfect control of direction and degree of heat at all times —thus reducing to minimum chances for underburning or overburning.

Testimonial

Hollywood, Ala.,
March 27th, 1914.

E. C. Tecktonius Mfg. Co.
Racine, Wisconsin.

Gentlemen:

Replying to your letter of the 21st inst.

We are pleased to state that your kilns are giving us entire satisfaction, effecting a great saving in fuel, besides delivering a very high percentage of marketable ware.

The construction of the underground flues and blind bottom is such that the heat is evenly distributed over the kiln without the use of dampers.

If one does not get good results with these kilns, it is the fault of the material or burner, and not of the kilns.

Our kilns were built before you designed the up-and-down draft type, and we are sure that even greater results could be secured with them.

We could not say too much in praise of your Band Fasteners as they are the best we have ever seen. We used home-made fasteners on our first kiln and had to rebuild it in three years. We could not be persuaded to buy anything other than the "Tecktonius."

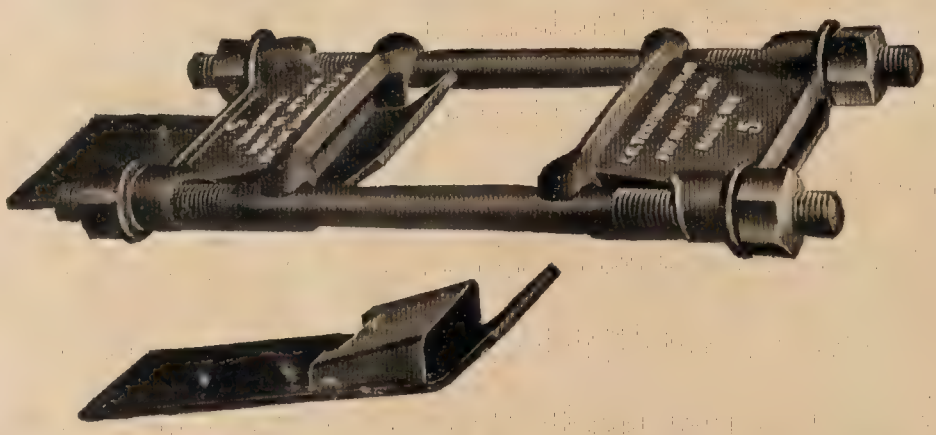
We shall take pleasure in answering any inquiries relative to your kilns or lugs.

Yours very truly,
Alabama Brick & Tile Co.,
W. B. Neher,
Manager.

"Tecktonius" Band Fastener

You wouldn't expect us to know more about your product than you do.

That's your business.



But you would expect us to know more about making Kiln Band Fasteners and other Kiln Iron Equipment.

That has been our business for 25 years. The "Tecktonius" Draw Band Fastener is known the world over as "The Rivetless Lug with the Bull Dog Grip"; the kind that is easy to put on, easy to take off; the kind that is stronger and more lasting than the band itself. Why not use "Tecktonius" and make your kiln construction safe?

Write for Prices and Terms.

E. C. TECKTONIUS MFG. CO., Racine Junction, Wis., U.S.A.

666.05
B

BRICK and CLAY RECORD

Link-Belt Silent Chain

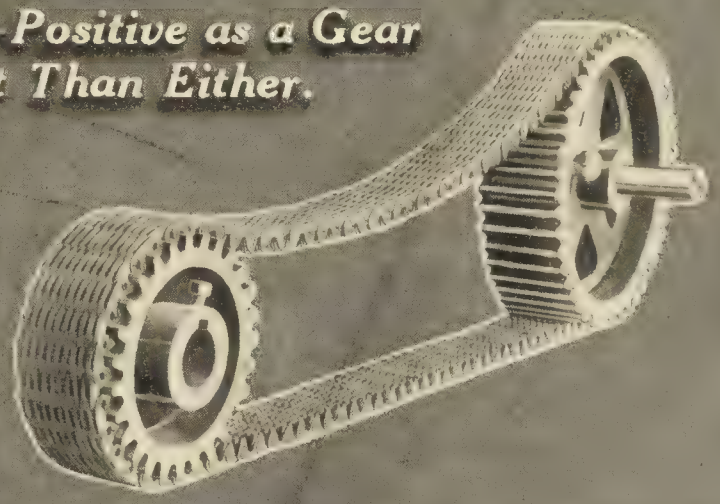
Flexible as a Belt—Positive as a Gear
More Efficient Than Either.

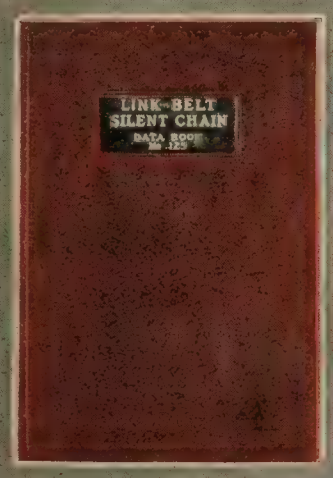
The Ideal Drive for

Machinery in Brick and Clay Working Plants

For Pug Mills	*Dry Pans*	*Pumps*
Blower Fans	*Granulators*	*Line Shafts*
Wet Pans	*Feeders*	*Etc.*

shows the highest sustained efficiency of all mediums for the transmission of power (98.2 per cent on actual test).





Link-Belt Silent Chain is a Superior Drive, Because—

It can be run at relatively high speeds—will run in either direction—is not affected by heat, cold or moisture—will transmit any amount of power—gives a positive velocity ratio—can be used on short or long centers—reduces journal friction to a minimum—it can not slip—it transmits power with less loss than gears—it operates quietly—self contained bases are not necessary—with the same amount of power applied—it delivers more to perform useful work.

Write for New Data Book No. 125

It consists of 112 pages, bound in flexible red cover, stamped in gold. Gives prices, method of selecting drives and full particulars. Suitable for the library of our foremost engineers, superintendents and managers as well as the small user of power transmitting equipment. Sent postpaid on request. Every Brick and Clay Plant should have a copy.

LINK-BELT COMPANY

PHILADELPHIA CHICAGO INDIANAPOLIS

New York	299 Broadway	Buffalo	698 Ellicott Square	Seattle	580 1st Ave., South
Boston	49 Federal St.	Cleveland	Rockefeller Building	San Francisco	Meese & Gottfried Co.
Pittsburgh	1501 Park Building	Detroit	911 Dime Bank Bldg.	New Orleans	Whitney Supply Co.
St. Louis	Central National Bank Bldg.	Toronto	John Millen & Son	Los Angeles	204 N. Los Angeles St.

Vol. XLVI, No. 4 Chicago February 16, 1915

WELLER-MADE

Complete Equipments for Handling Materials and Transmitting Power

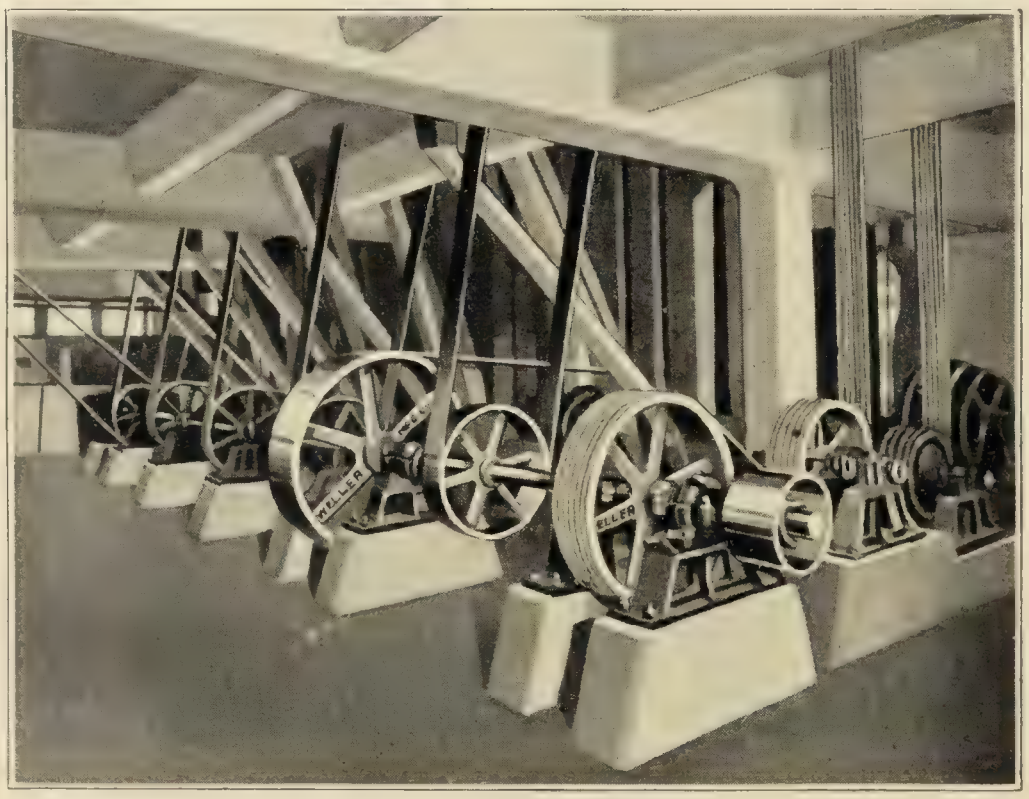


Self Contained Belt Conveyors for handling green ware from Cutting Tables to dryer cars or other points, or for handling dried or finished ware.

One large company is saving $16.00 to $20.00 per day in labor only, in addition to greatly increasing the capacity, on an outfit costing less than $350.00 complete with motor.

Completely self contained in steel frame.
No exposed gearing to injure workmen.

Can be installed any place.
Adjustable feet for uneven floors.



Complete Power Transmission Equipments for transmitting 1 H. P. or 2500 H. P. any distance up to 1,000 feet centers.

Write for General Catalogue J-20

Weller Manufacturing Co., Chicago

Trautwein DRYERS

INSURE YOUR CAPACITY

To have your plant *doing business* through 1915, you should have a Trautwein Dryer—so getting the

ASSURANCE

OF INCREASED CAPACITY
GREATEST ECONOMY
and LARGEST PROFITS

Our Dryers Accomplish These Things With Ease

Trautwein Dryer & Engineering Co.

Manufacturers—Engineers

Plymouth Building **CHICAGO**

Another Large Manufacturer Uses Smith Steel Shell Kilns

After careful and extended investigation, the Mason City Brick & Tile Co. has closed a contract for Claude Smith Steel Shell Kilns.

This Company (operating six plants) is the largest single company in the west making hollow ware.

WHY HESITATE WHEN SUCCESSFUL MEN USE UP TO DATE METHODS

A card to us brings further information

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Alliance Brick Co..... 383
Alliance Clay Pro. Co...P- 8
Alsey Brick & Tile Co...P- 6
Alton Brick Co.....P-11
American Clay & Cement Corp. P-13
American Enameled Brick & Tile Co.....P-13
American Process Co... 387
Ambursen Co. 392
Arbuckle & Co..... 418
Atlas Car & Mfg. Co... 369
Auburn Wagon Co..... 370

Baird Machine & Mfg. Co. 372
Barr Clay Co.....P- 6
Big Four Clay Co.....P- 8
Bessemer Limestone Co..P- 8
Bradford Pressed Bk. Co.P-13
Bonner & Marshall.....P-15
Brighton Fire Brick Co..P- 6
Broderick & Bascom.... 365
Brown Instrument Co... 367
Buckeye Rolling Mill Co. 365

Canton Grate Co..... 388
Carlyle Paving Bk. Co..P-10
Ceramic Sup. & Cons. Co. 368
Chambers Bros. Co..331-374
Chicago Brick M. Co... 392
Chicago Retort & Fire Brick Co. .....P- 4
Chicago Mfg. & Dis. Co. 366
Childs, O. J., Co..... 374
Classified Ads.....415-416
Clearfield Machine Shops 364
Cleveland Alloys Co.... 372
Clinton Paving Bk. Co...P- 8
Copping Bros. 364
Cutshall, J. M. & Carl... 366

Davenport Loco. Wks... 366
Danville Brick Co.....P-10
Davis Fire Brick Co.....P- 4
Deavitt, H. M..... 364
Deckman-Duty Brick Co.P- 8
Dewey Bros. 376
Dodge Mfg. Co..... 364
Dover Fire Brick Co....P- 4
Dunn Wire-Cut Lug Bk. Co. .....P- 7

Eagle Iron Works..... 367
Eastern Machy. Co..... 417
Engelhard, Chas. 366
Evans Clay Co.....P- 4

Federal Clay Pro. Co...P- 6
Frink Pyrometer Co.... 364

Gandy Belting Co..... 377
General Traffic Assoc... 387
Gerlock, H. W..... 364
Gethmann Brick Co....P-13
Globe Brick Co.....P-12

Hamburg Vit. Bk. Co...P-10
Harris Brick Co.....P- 8
Hendrick Mfg. Co..... 367
Hinde & Dauch Paper Co. 368
Hocking Valley Bk. Co..P-10
Hocking Valley Pro. Co.P-11
Hook Patent Kiln Co... 378
Hydraulic-Press Brick Co.P-13

Ironclay Brick Co.....P-12

Jackson & Church Co.. 367

One-Sided Ad Talks

The men who pay for advertising space—and for the writing of advertisements—invest this money in an attempt to secure profit-making orders.

At the same time, they render an undoubted service to the men who read the advertisements.

The one drawback to the system is, however, that the advertising "talk" is one-sided.

The advertiser "talks" without interruption and without contradiction—telling his story as he knows and feels it.

He has neither encouragement of opposition nor the psychological "tip" that a good salesman receives when something his "prospect" says or looks or acts, tells this salesman that the time has come to "get the name on the dotted line."

All good salesmen know that any conversation following that particular moment is apt to send the order glimmering.

If readers of advertisements could "talk back" it would be a good thing for the advertisers.

The editor of this paper would welcome any criticisms which might be made him, on the formation, the subject matter or the general form of presentation of advertisements that appear in this magazine.

The improvement of each single advertisement helps to make all other advertisements more readable and more convincing. The editorial pages have the advantage of a constant stream of criticism—the advertising pages would benefit if a similar system were made possible.

The letter "P" preceding a number refers to the "Pink Section"

Keim Brick & Tile Co...P-15
Keller Brick Co.....P-13
Kimbell, S. S., Brick Co.P-13
Kissel Motor Car Co.... 409

Lehigh Car Wheel & Axle Works 365
Lehigh Portland Cement Co. 375
Link-Belt Co. 325

Main Belting Co..... 329
Manufacturers Eq. Co... 379
Marinette Iron Works.. 380
Marion M. Fdry. & S. Co. 413
Marion Steam Shovel Co. 411
Marsh-Capron Co. 373
Martin Brick M. Mfg. Co. 371
Martin Grate Co..... 382
Mathews Gravity Carrier 391
Maurer & Son, Henry...P- 4
Mayer Brick Co., C. P...P-10
McArthur Brick Co.....P-12
Mexico Bk. & F. Clay Co.P- 6
Metropolitan Pav. Bk. Co.P-10
Murphysboro Pav. Bk. Co. .....P- 6
Murray Iron Wks. Co... 368

N. P. B. M. A.....P- 9
National Dry Kiln Co... 390
National Roofing Tile Co.P-15
Nelsonville Brick Co....P- 8

Ohio Gal. & Mfg. Co... 387
Ohio Kiln Co..... 369

Pettigrew Foundry Co.. 371
Pittsburgh Tile Mfg. Co.P-15
Purington Pav. Bk. Co..P-10

Queens Run Fire Bk. Co.P- 4
Quinn, John .....P- 6

Read & Day..... 364
Roessler & Hasslacher.. 373
Roll Mfg. Co.....P-15

Sackett Screen & Chute Co. 375
S. A. F. E..... 412
Sawyer Belting Co..... 410
Scandinavia Belting Co.. 332
Schaffer Eng. & Eq. Co. 389
Schofield-Burkett Cons.. 410
Schultz & Son, A. L.... 370
Shawmut Paving Bk. Co.P-10
Smith Co., Claude..... 327
Smith, W. W..... 388
Soisson Fire Bk. Co....P- 4
Southern Fire Bk. & Clay Co. P-12
Standard Dry Kiln Co.. 386
Sterling Brick Co.....P- 6
Stupakoff Laboratories.. 365
Sturtevant Co., B. F.... 381

Tecktonious Mfg. Co... 387
Terre Haute Vit. Bk. Co.P-11
Thew Auto. Shovel Co.. 409
Trautwein Dryer & Engineering Co. 327

United Brick Co.....P- 8
United States Roofing Tile Co. P-15

Webb Wire Works..... 387
Weller Mfg. Co..... 326
Westinghouse El. & Mfg. 389

Leviathan Belting

Is No Better

in an advertisement than is its weakest imitator. It is on the job, right in the clay plant

That It Excels

Ask the man who owns a dividend producer.

Main Belting Company

Manufacturers and Engineers

Philadelphia
Pittsburgh
New York
Seattle
Chicago
Birmingham

Main Belting Co. of Canada, Ltd.
Montreal Toronto

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

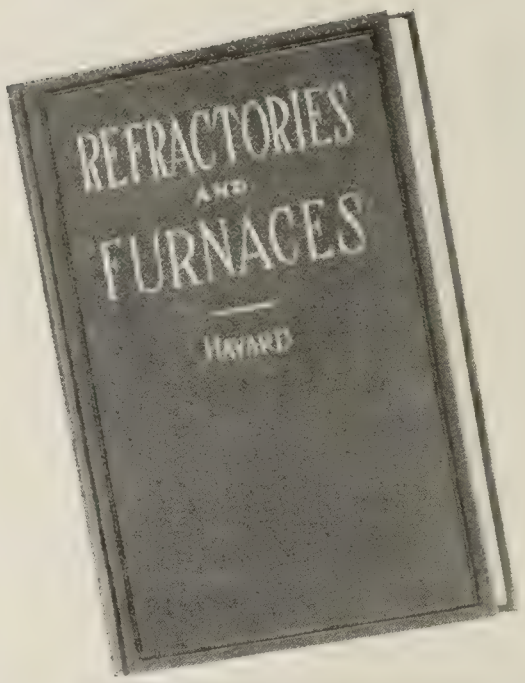
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



356 Pages, 6x9, 123 Illus. . . . . $.400

THIS BOOK is based on notes made during the author's activities as superintendent of furnace operations in America, England and Germany. It digests, besides, all of the available information on the properties and preparation, sources and processes of manufacture, of the materials with which industrial furnaces are built. It includes, furthermore, a comprehensive study of the physical and chemical properties of these materials.

The author has aimed to bring some order out of the chaos which has hitherto existed in the data on this subject, and to correlate and systematize the available information.

He first classifies refractory materials and discusses the relations between slags and these materials. He then goes into the question of the preparation of the various kinds of refractories and their uses in the various metallurgical processes. He gives valuable data on the construction of furnaces, the testing of refractory products, the thermo-physical properties and heat measurements.

He undertakes to promote efficiency in furnace work and a reduction in the cost item of furnace repairs and masonry. He has been assisted by a number of specialists and manufacturers in the preparation of the material that appears in the pages of this valuable work. The book is for sale through "Brick and Clay Record's" Book Department, at $4.00, postpaid.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy)....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller)....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

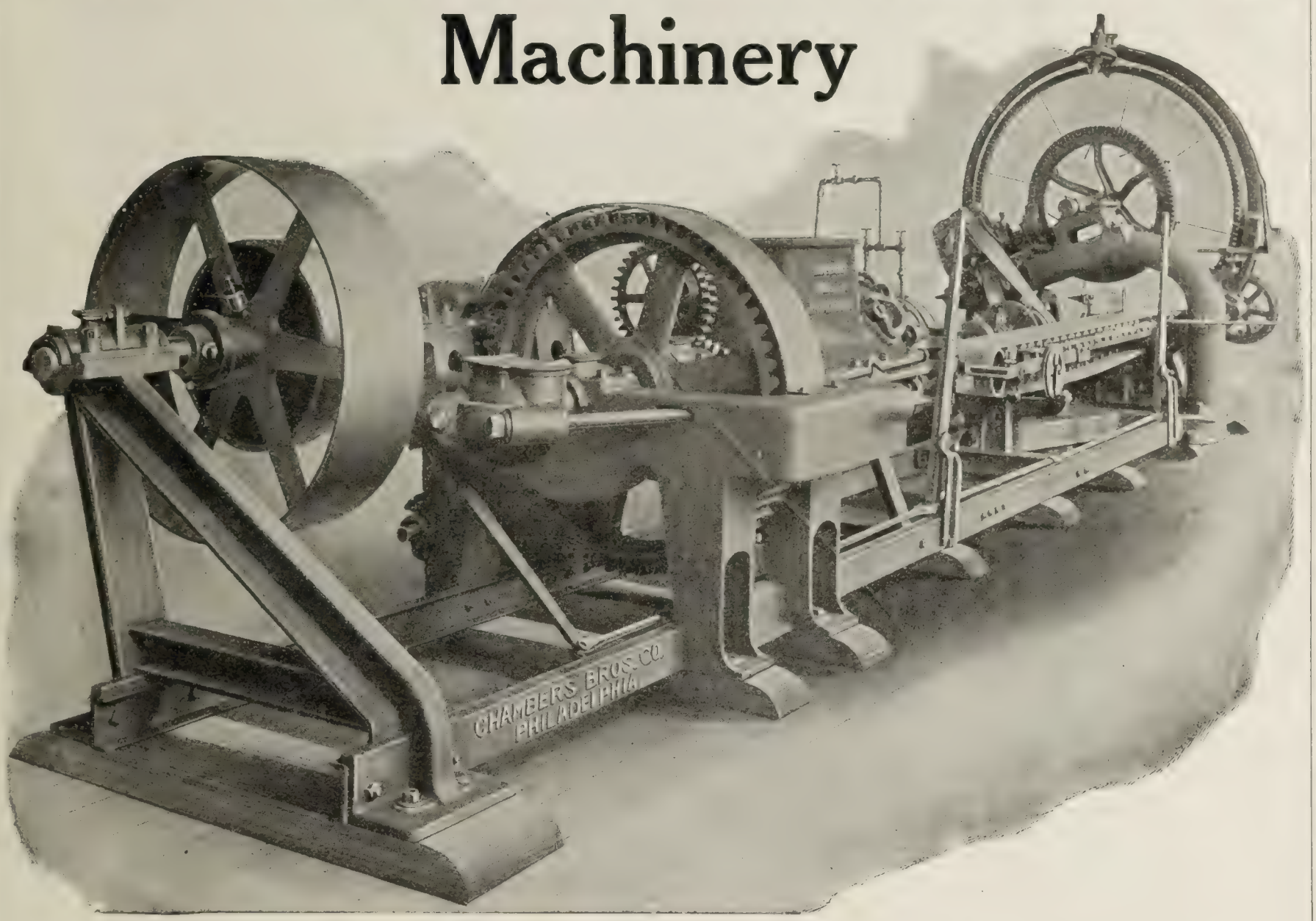
Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators and Feeders—Pug-Mills of various lengths and designs.

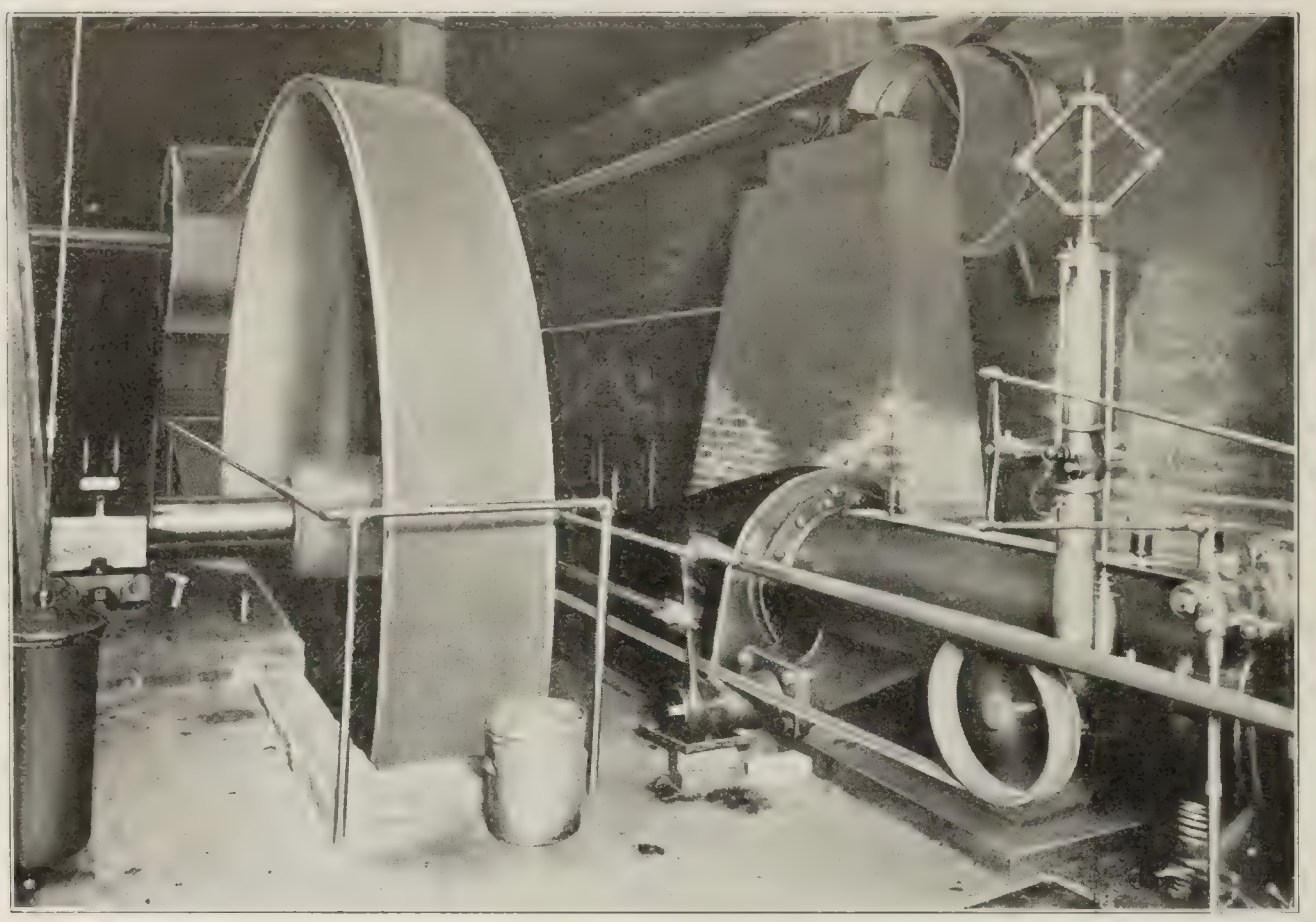
CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 374)

"SCANDINAVIA"

SOLID WOVEN COTTON BELTING
NO PLIES—NO STITCHES—NO LAPS

"Scandinavia" Is Made to Last and Outlast



Not What You Pay— But What You Get For What You Pay

"SCANDINAVIA" has proved a most economical belt for both transmission and conveying in brick and clay plants throughout the country.

Illustration shows "SCANDINAVIA" in a large Ohio brick plant where service given is better than rubber, which was previously used.

"SCANDINAVIA" is a solid woven, treated cotton fabric. It is made upon power looms and each strand of the cotton is subjected to severe stress during the entire process of weaving. It is not only surface hardened but is anti-frictioned throughout. The result is a belting having no plies, no stitches or laps; of remarkable strength, pliability and durability and little stretch.

"SCANDINAVIA" is Absolutely Guaranteed.

SCANDINAVIA BELTING COMPANY

106-108 Reade Street, New York.

BRANCHES:

Atlanta, Boston, Buffalo, Chicago, Cleveland, Easton, Pa., Pittsburgh, San Francisco, Los Angeles, Portland, Ore.

Canada—Federal Engineering Co., Limited—Toronto and Montreal.

Write our nearest office.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, February 16, 1915

Vol. XLVI No. 4

Table of Contents

Brick—the Scapegoat 336
Burned Clay for Interiors 348
Buy Now—the Slogan at Detroit . . 344
Reaching the Farmer 352

The Editor's Corner 334

Freight Tariffs and Troubles 362
Letter Box 360
Machinery and Equipment 363
Pottery Notes 375
Questions and Answers 356
Semi-Monthly Trade Review 364
The Superintendent 358
Wake of the News 366

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription:
One Year, (24 Numbers)
U. S. . $2.00
Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

IN A FEW WEEKS the last of the annual conventions of clayworkers will be over, the men who make brick, hollow ware, sewer-pipe and drain-tile will have settled down to the serious business of making and selling their wares.

Plants that have been closed will start—some at "capacity," some with a small output. Repairs and additions will be completed—the race will be on.

The papers that have been read at the conventions will become more and more a hazy memory. Resolutions that were made, in the way of better cost accounting, better management, better selling methods and better system will be, for the main part, forgotten.

Nineteen-fifteen, so far as it brings any great improvement in—not to—the clayworker, will be very much the same as nineteen-fourteen, nineteen-thirteen and nineteen-twelve.

The industry is wasteful. It wastes labor, fuel, product, opportunity. It stands in marked contrast to almost every other industry of importance.

Millions have been made from the by-products of coal, of steel, of cotton, wool and lumber. The "by-product" of the average clay plant goes over the dump heap.

This in the face of the fact that burned clay, vitrified and crushed, makes an aggregate for concrete that increases the fire-resisting qualities of that material to a point where it is an almost safe material.

The clayworking industry staggers under a labor-load that yearly grows more costly, more unsatisfactory, more dangerous. Employers' liability, workmen's compensation and compulsory insurance laws have come to be looked upon as necessary evils—yet labor-saving machinery has a reluctant buyer in the average clay plant owner.

Fuel economy is unknown on three plants in four. The round of the year is piling the heat into the kiln for a few days and then letting it escape as rapidly as the character of the ware will allow. "And the smoke goes up the chimney just the same."

Product is wasted—"soft" commons go at reduced prices, "off-shade" face-brick reduce average sales figures, blistered pipe are used to "meet competition" that is nurtured, raised and strengthened by a sliding scale of bids, based not upon the real value of the ware, but upon the fancied eagerness of the buyer to obtain something "just as good for less money."

Opportunity is wasted in the struggle of one clay product against another, or the same clay product against that made by another manufacturer, instead of the opening of new fields—new markets—new prospects.

The manufacturer of brick, of hollow ware and of tile seems to feel that there is just so much business to be obtained, and that, unless he "hustles" for it, some other manufacturer of brick, or hollow ware, or tile will take it away from him. He does not create business, he fights for what he thinks is his share of the business created for him.

Here and there, a leader in the industry demonstrates his leadership by striking out on a new path. It may be a new texture in face-brick—it may be an advertising campaign. It may be simply the adoption of a trade name for his product. Within a month twenty plants have imitated the texture, as many salesmen have misrepresented their wares, saying that they are "just the same" as the advertised product, and twice that number of clay plant owners have searched their dictionaries for a word that will be as nearly like the one adopted by the leader, as is possible without absolute infringement.

The while, cement-concrete, a comparatively new building material, invades the field and takes away brick's birthright—cement drain-

tile swindles the farmer and sets the tile demand back by a score of years. Lumber keeps increasing in price without losing in demand, gypsum pays six per cent dividends on a seven and a half million dollar capitalization—to one company alone.

What State Associations Can Do

Someone has said that there "is no place" for state associations of clayworkers. The man who said that meant that the national associations, formed, for the most part, to promote the interests of separate branches of the industry, were drawing funds from so many plants, that subscribing to the needs of the state associations made an added and excessive burden.

If this view of the case be correct, then the state associations are social in their object, rather than constructive. Their sole excuse for being in existence is that they foster the get-together spirit and provide a place where clay men may meet without a long journey.

There is, however, a sphere of usefulness that the state organizations are neglecting. It lies in the direction of organized publicity, which lacks directness when handled by national organizations, and is too great a burden for the individual.

A state organization can, with the expenditure of a comparatively small sum, reach every architect practicing in that state, with powerful literature favoring burned clay. It can, for a comparatively small sum, reach every farmer in that state with good printed arguments for clay drain tile, for brick and hollow block.

Every municipal engineer, every highway commissioner, every "good roads" advocate in that state can be enlightened to the merits of brick paving and the resultant economy of the "dustless road."

Better than all, every clay products manufacturer in the state can be furnished with attractive printed matter, uniform in its argument, elaborate in its formation, economical in its cost.

It is not necessary that the manufacturer who receives the benefits of this propaganda be a member of the association. There would be little trouble, later on, in inducing him to join —to contribute to the general expense.

A few would pay for the initial work. Copies of the printed matter, sent to the clay products men who were not in the association would be in the nature of samples—samples of what the association was doing to benefit the clayworking industry of the state.

State organizations have something to sell—it is service. They cannot expect buyers—in the shape of contributing members—until they have samples to show them.

This is the application of the merchandising principle to what can be, if it will, a great merchandising movement.

Common Brick Needs An Organization

With the inauguration of the new Hollow Building Tile Manufacturers' Association, a new, virile force has come into the field. To quote one of the speakers at a recent meeting in Chicago, the new association, following the lead of the paving-brick, the face-brick and refractories manufacturers, is "commercial."

By this is meant that the hollow tile manufacturers are going out after business—after constructive legislation—after anything and everything that will help them to a greater demand for their material.

To this end an assessment has been levied, based upon shipments made from December 1, 1913 to the same date in 1914. The American Face Brick Association supports its active work in the improvement of that branch of the industry by a similar sensible arrangement. The National Paving Brick Manufacturers' Association has brought prosperity to the manufacturers of paving brick by the collection of the "sinews of war" along the same lines.

The National Brick Manufacturers' Association will be in session, in Detroit, as this issue of "Brick and Clay Record" is mailed to its subscribers. If there, and then, a movement were started, that would bind the manufacturers of common brick into a body with a constructive purpose, and with funds to make that purpose effective, it would add strength to the work that is being done by other clay products organizations which, as an initial step to real progress, backed their individual opinions as to the merits of their materials, with the individual checks of their members.



These Brick Walls Withstood Heat that Melted Glass, Melted the Sash Weights, Turned the Limestone Sill to Chalk. They are Speckled with What Remains of Dehydrated Concrete. This is Concrete Which, Having Lost its Consistency Through the Action of the Flames, Joined, and Became a Part of the Fire Stream that Quenched the Conflagration

Brick—the of the Concrete Fire

Early Reports So Misleading thatInvestigation of the Most Painstaking Nature Was Necessary to Bring to Light the Real Truth of the Now Famous Edison Factory Fire.

TWO MONTHS have elapsed since the greatest "fireproof" fire in history startled the building world. During this time, accounts innumerable have been published, that have run the gamut from "Brick the only material that withstood the flames" to "The brick buildings were a complete loss, while the concrete buildings were practically uninjured". As time passes, the real truth comes to light.

AT ABOUT 5:30 IN THE AFTERNOON of December 9, Thomas A. Edison dropped about a million dollars. At 6:30 he started to remake it. Two months have passed and he is still at work—gaining on the million dollars that went up in flame and smoke. Incidentally, he is covering the greatest hoax since the Cardiff giant.

The morning after the fire at West Orange newspapers throughout the country reported the total destruction of Thomas A. Edison's "$5,000,000 plant," and, since it was, in the main, constructed of concrete, made the statement that those concrete building were a total loss. Within twenty-four hours these newspaper articles were flatly contradicted, with the added information that, although unusually high temperatures had been reached, the reinforced concrete had come through the fire practically unscathed.

One of the claims was that the "salvage" would reach 87½ per cent—a most remarkable performance for any building material.

These contradictory statements are readily explained by the fact that the earlier reports of the fire were in skeleton form, and that they stated "the entire plant" was in flames. The newspaper offices, knowing that the greater part of the plant was concrete, built up the story—the concrete buildings were on fire—a total loss was imminent—and concrete has failed as a fireproof material.

Then, as has been said earlier in this article, Thomas A. Edison started to gain a little ground on his million dollar fire loss.

The denial came from the inner offices of the Thomas A. Edison Company. Mr. Edison not only designed and constructed the buildings, but manufactured the cement that went into them. The formulae was his. They were secret, and had been heralded as the formulae of the most perfect cement in existence.

It is but natural that since the fountain head of information was colored by so intense a personal interest reports that reached the earlier investigators were prejudiced. There had been a great fire—the buildings were, in truth, constructed of concrete. There they stood—the shoring of the walls was but incidental. Repairing would be slight—the buildings were almost as good as new. The salvage was close to 87½ per cent.

Other investigations followed and further newspaper and magazine articles have appeared. Each bears the mark of a more sincere and careful inquiry into the real effect of the fire upon building materials that were employed. Each has shown a growing disinclination to accept the statements made by the Edison engineers as to

Scapegoat Great at West Orange

Brick has been Made to Suffer Serious Misrepresentation and Concrete Given a Clean Bill of Health. This is Now Disputed by the Strongest Photographic Proof.

THIS MAGAZINE refrained from publishing the facts until it had the result of two investigations, conducted separately, by its own representatives. They were accompanied by expert photographers. In this account, no attempt is made to discredit concrete or any other material. The facts that are given are indisputable. Concrete was a "failure" because it was used ignorantly.



Here is an Instance of the Dependability of a Reinforced Concrete Column, Constructed along the Lines of Approved Edison Engineering. The Twisted Steel Reinforcement, Placed within Two Inches of the Outside of the Column, was Quickly Subject to the Heat's Action. The Steel Reinforcement Then Destroyed the Column it was Supposed to Strengthen

the amount of damage sustained by the buildings, and an ever-increasing inclination to accept the physical evidence of split columns, disintegrated concrete and other signs of the action of fire—evidences that bear out all of the theories that were, seemingly, set at naught by the earlier reports.

So, in adding this article to the "literature" of the Edison fire, it must be understood that it marks but one step in the march of information that will, unless the power of the "Wizard of West Orange" be greater than that of Truth itself, uncover the real facts that can only be reached by a careful study of the nature of all concrete and of what scientists know to be its action under fire.

TYPE OF CONSTRUCTION

It is no discredit to Mr. Edison to state frankly and fearlessly that he is not "the last word" in structural engineering. In conversing with two of the most eminent structural engineers in America, the writer of this article heard them condemn, most strongly, the type of construction that Mr. Edison allowed at West Orange.

For example, the illustration shows that back of the concrete slabs that face the columns, a twisted steel bar had been placed as "reinforcement." During the fire the corners of these columns were, in most cases, literally torn off—the expansion of this twisted steel bar acting upon the then weakened concrete—concrete dehydrated by the heat which later twisted the bar. Here, it will be seen, that having failed to insulate against heat, the concrete became a victim to the expansion of the steel that was supposed to give it strength.

In these columns there was no spiral reinforcement—no central reinforcement—none of the ordinary provisions against the very things that happened. The methods used in the construction of this plant were peculiar—perhaps peculiar to Mr. Edison. *It is built practically the same as though all of the posts and floor beams were of wood, and would indicate that Mr. Edison's structural ability had not advanced beyond that of those who still build with wood.*

The principal features of safety, which are recognized by fire-prevention engineers, were completely ignored. The several acres which these contiguous buildings cover are practically one unobstructed open area for the most rapid spread of fire. While city building codes allow only 7,000 to 15,000 square feet, Mr. Edison's were many of them connected, and those that were not, were so close to each other as to make the connection nearly actual. These buildings give a total area many times greater than that allowed by any city building code, and no protection was provided, in the shape of approved fire-resisting walls, to serve as cut-offs. The floor openings were just as poorly



Another Case of Poorly Protected Reinforcement. When the Fire Reached this Column it Took But a Short Time to Swell the Twisted Steel Bars, and Their Expansion Wrecked the Column

protected. Mr. Edison staked his dollars on the chance of there being no fire—and on the quality of a cement that he manufactured himself.

Perhaps no better criticism on the position which Mr. Edison took, when he ignored the structural wisdom of men who had built before—when he set at naught the experience of those who had made reinforced concrete a life study, when he pooh-poohed the observations of those who had observed the effect of fire and water on concrete construction at San Francisco, and at Baltimore, can be found than in the letter written by Franklin H. Wentworth, published in the Boston (Mass.) "Herald" of January 6. Mr. Wentworth's position gives his letter a double interest. It reads:

"Thomas A. Edison has made so great a personal contribution to the progress, comfort and pleasure of the world that one is loath to cast a shadow of criticism upon him. One might say that however heavy a burden might be imposed upon his countrymen by any mistaken judgment on his part, he has requited all such sacrifices in advance by the rare offerings of his genius. But a secret of our admiration for others is that it is always on the watch for circumstances to justify itself, and it is not unfair to say that the circumstances of the fire at West Orange add no luster to the name of the American 'wizard.' For the economics of the situation are too clear. Mr. Edison's philosophical remark that he 'took a gambler's chance,' cannot elicit admiration from the well informed. If there is an ethic in gambling it would seem to demand that the gambler's loss should fall upon the gambler himself. The true sportsman does not gamble with the lives and welfare of others.

"The happiness of the Trober family, whose father went faithfully to his death in the Edison plant, was staked upon Mr. Edison's gaming table; the physical comfort of the hundreds of employes who suddenly face the winter without employment was there, also. Mr. Edison will not rebuild the plant; other men will rebuild it. The labor of replacement of this colossal waste will be performed by others and paid for by others—by the purchasers of the patented wares marketed by the corporation which bears Mr. Edison's name. Human society is today too complex, and modern industrial organization makes men too interdependent, to permit of individual gambling by its units. The loss of this great property through the absence of such common retardants as fire doors and fire windows cannot be easily condoned by those who are aware of the impoverishment of the nation through just such criminal negligence as this.

"We could have wished Mr. Edison had pleaded ignorance, or at least been able to say that the officers of his company charged with the care of the works had been ignorant, but his statement that he took a gambler's chance does not leave open this avenue for our sympathy—it indicates that he knew and assumed responsibility for what might happen. In such a situation our profoundest admiration for Mr. Edison, the inventor, is confused by a bewildering sense of disappointment in the social consciousness of Mr. Edison, the man."

THE ACTION OF HEAT

The fire-resisting qualities of a brick wall have caused it to be taken as a standard by fire underwriters. Brick work—or rather, the brick itself, will endure—that is, stand, and be uninjured by a temperature of from 1,800 to 2,800 degrees Fahrenheit, depending upon the fluxes in the original clay from which the brick was made. A temperature of 1,800 degrees Fahrenheit can be maintained on one side of a 12 inch brick wall for four hours and the other



In a Mesh of Entangled Steel, "Dead" Concrete, Lime and Plaster, Brick Is Conspicuous by its Absence. Evidently the Small Amount of Brickwork that Took Part in the Edison Fire Drama, Played That Part with Considerable Credit to Those Who Made and Laid It.

side of the wall still be cool enough to hold the hand upon."* While we figure that a brick wall is best made, when laid in mortar that is largely composed of Portland cement, the fact is that "As far as actual resistance to fire or intense heat, common lime-and-sand mortar in small quantities, as when used for joints between brick work, or as plastering on a brick wall, has greater fire-resisting qualities than any other plastic material."†

The mortar may be said to "endure" heat to the degree that will dehydrate it, or remove all water, so leaving the mortar in a chalk form. The degree of heat necessary to dehydrate ordinary mortar is from 1,200 to 1,500 degrees Fahrenheit. And it is proved that this "ordinary" mortar—



One of Two Views of the Same Building. At this End, Reinforced Concrete Construction Failed, Utterly. The Building "Stands Up By the Grace of Yellow Pine Shoring"

that is, lime and sand—has greater fire-resisting qualities than cement mortar.

And, going farther than that—cement concrete has no more fire-resistant power than cement mortar—in fact, less. The amount less is determined by the kind of aggregate used in its compound. When limestone aggregate is used we confront the fact that 1,200 degrees will burn limestone to quick-lime.

The reason that brickwork endures heat is because so much of the surface that is presented to the fire is of really fire-resistant material. With a 2½ in. brick and a ½ in. joint, nine-tenths of the wall surface has an assured endurance power of 1,800 to 2,800 degrees Fahrenheit. The other tenth is held in place, as it were, between the superior planes of higher fire-resistance. A mechanical bond—the position in which the brick are placed, maintains the strength of the wall, even after the dehydration of the first four inches of mortar.

Concrete surfaces, on the contrary, expose a uniform ex-

*A. L. A. Himmelwright, C. E., M. Am. Soc. C. E., etc. "Report on the San Francisco Fire and Earthquake. Made for the Roebling Construction Company, New York"—Page 249.

†P. B. Wright—"What Constitutes a Fireproof Building Material?"



Another View of the Building Shown in the Illustration to the Left. Here a Brick Wall Supported the Second and Third Stories, Which Were of Reinforced Concrete

panse of lower fire-resisting power. As the heat reaches it dehydration begins, working slowly, it is true, but nevertheless surely, *and as fast as the cement dehydrates its strength is destroyed.*

In cement concrete fully one-seventh of all of the ma-



Along the Left of This Illustration will be seen Another Brick Wall. From it Extended the Wood Floors, Supported by Wood Columns. The Wood is Gone—the Brick Stands Almost "As Good as New"



Another Case Where Inexpert Use Made Concrete a Failure

terial is lime. Where limestone aggregate is used with the formula of one cement, two sand and four limestone, it is very clear that five-sevenths of the entire body of the concrete can be destroyed by that degree of heat which will dehydrate lime. In brickwork, where the joint is from a quarter to a half inch, one-tenth of the entire mass is mortar, and of this mortar but one-third is lime.

Now, having considered these points—which are of vital importance—we will consider the penetrability (or the heat conducting power) of the materials. Laboratory tests show that concrete does have a low conducting power and that brickwork conducts heat somewhat more rapidly. The more dense the brick the more rapidly it conducts the heat —and the more porous the cement, the slower will be the heating conducting power. So, in porous cement concrete we have a good non-conductor. This porosity, however, is a detriment in another direction—that is, in the use of cement for exterior surfaces, since in exterior work porosity is the chief defect.

The depth to which excessive heat in ordinary conflagrations pentrates concrete surfaces is estimated to be from two to four inches, and concrete surfaces are usually completely destroyed, or very much weakened to that depth.

In brickwork the mortar will be destroyed or weakened to a similar depth, possibly 25 per cent deeper.

Where a fire has occurred the question of repair and replacement is of prime importance. The ability to reuse a wall determines the rate of salvage. In brickwork it is not infrequent, in repair practice, to pick out the "dead" mortar, and repoint the wall, leaving it as good as new.

In concrete work, on the other hand, it is necessary to completely remove all parts of the wall that have been damaged by 1,200 to 1,400 degree Fahrenheit, and then reface. The difficulty of securing a bond between new and old concrete is too well nown to merit discussion.

As a practical treatment of the question, however, the work of restoration, now under way at the Edison plant, is illuminating. In restoring the columns, some of which are shown in these illustrations, the workmen are removing only such portions of the surface as have spalled off, and no work with pick and shovel was to be observed. The investigator was able to remove, with his bare hands, prices as large as two or three fingers, and which were easily crushed in the palm. *The actual crushing strength of the concrete that was left will never be known unless at some future time the strain of these buildings leads to a collapse.*

As to the question of salvage—it is very doubtful if, were these buildings covered by insurance, Mr. Edison would allow the insurance company to replace and restore this concrete work without going back to a point where safety was fairly assured.

It looks like another "gambler's chance."

In the Edison fire a great many columns are to be seen which are completely broken in two. In one instance, at one end of the disc and cylinder record building on one floor, very nearly one-half of all the supporting columns are completely wrecked by the action of fire and water. Just exactly what action caused these columns to be destroyed more than the others, is not determined, but it is well known from experience that the turn of a powerful hose stream upon superheated concrete will rapidly remove the surface, and the breaking of a powerful hose stream upon superheated concrete will rapidly remove the surface, and the breaking of the column is somewhat similar to the breaking of stonework under the same conditions. It spalls off rapidly, and with an almost explosive action.

Prejudiced men have spoken of the action of these columns, one group declaring that if sufficient water had been turned upon the Edison plant it would have been as entirely a loss as the columns that are shown in these illustrations. Others, speaking as positively, declare that if no water at all had been used, there would have been but little damage. The truth lies somewhere in between.

One fact is prefectly clear: As the concrete dehydrated it became porous, and with the expansion of the increased heat, this porosity was augmented. Then the stream of water found concrete hot enough to turn the water into steam within the openings caused by the increased porosity



This Refutes the Claim of Eighty-Seven Per Cent Salvage

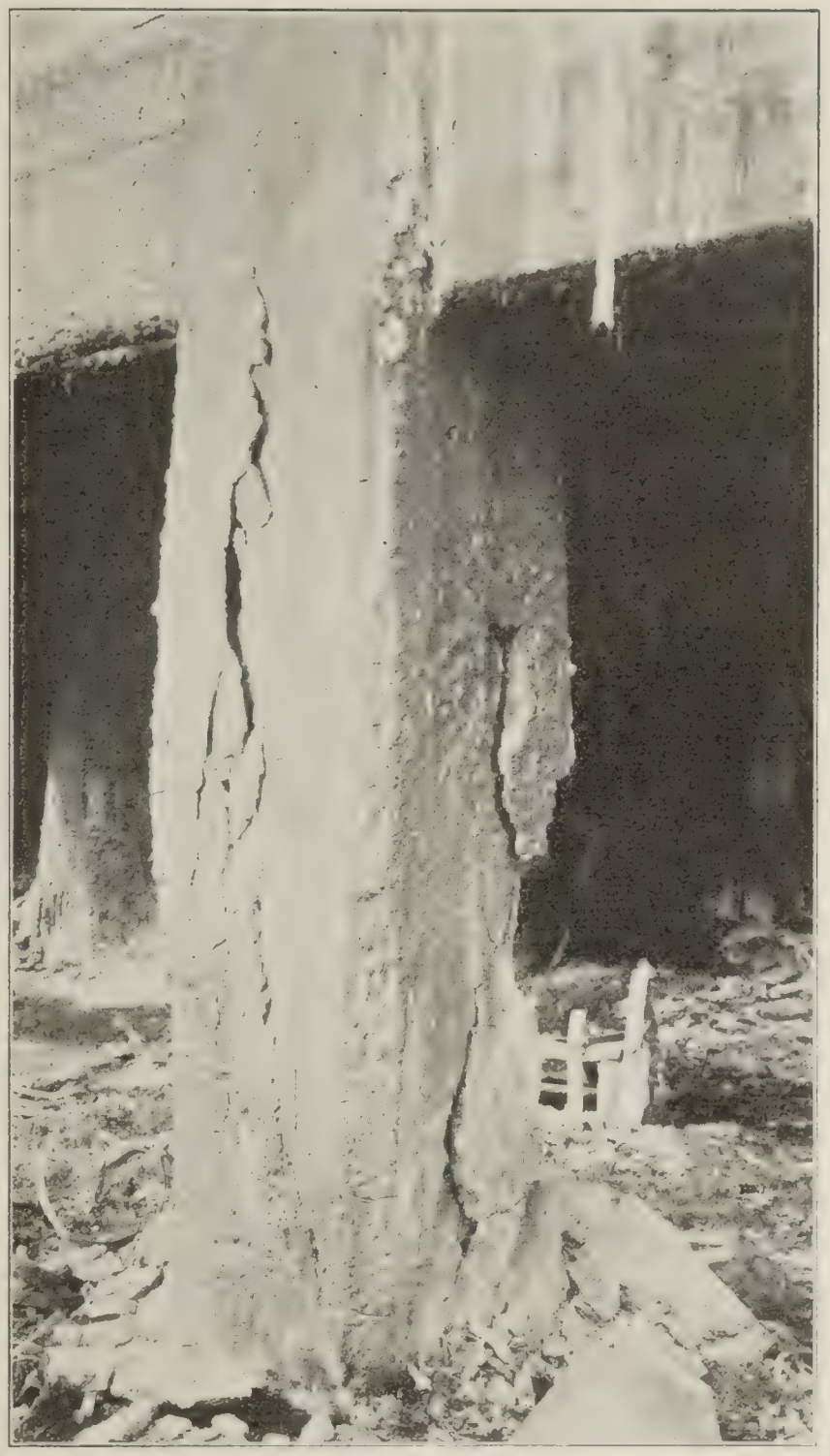
and that is one of the reasons, if not the greatest reason, for the erosion of the concrete surfaces.

This truth of concrete should be applied to any discussion of the wreckage or salvage that was left after the Edison fire. Statements made by any technically skilled observer, or the merely commercial or practical observer, that the concrete is intact, or that it is not damaged at all, are subject to sharp criticism. Take a hammer and walk up to any of these walls or columns subjected to a high degree of heat—and that have not shown a visual evidence of being weakened—they will reveal it under the stroke of the hammer. They sound like dead plaster and *this is bound to be true to whatever depth* 1,200 *to* 1,500 *degrees of heat was able to penetrate.*

It is very evident in watching the restoration of the Edison plant that the workmen are not following any rule based on an intelligence which recognizes this fact.

The ceilings of the factory workrooms are standing in many cases with no apparent damage. The restoring crew is putting on heavy coats of whitewash. This will not restore the strength of the concrete, and while that strength may be sufficient for its purpose for a number of years, it may be true, on the contrary, that in a few weeks it will be necessary to put up wire lath and a complete coat of plaster, making thus a false ceiling to catch the small particles, which will later be dislodged and begin to fall into the machinery of the Edison plant.

If such prove to be the case no one need be surprised. On the contrary, if those ceilings do not spall off—thus dusting the machinery—it will seem to be a proof that all we know about the dehydration of concrete must be reorganized.



What Fire and Water Does to Reinforced Concrete. Did You Ever See a Brick Pier Act Like That?

NOT THE FIRST EDISON MISTAKE

The object of this article is, frankly, to plant a warning sign in the path of what is palpably a false impression as to the action of concrete under fire conditions, and the salvage that is either actual or assumed. One difficulty in this is the fact that Mr. Edison is so strongly entrenched in the public mind as a man of superhuman intelligence, and of seeming infallibility. If, indeed, it be impossible for him to be mistaken, then the building of this great plant, accompanied as it was by the complete setting aside of the approved fire-resistant methods of construction, the absence of sprinklers, the closely set buildings—all these are correct in principle, and the hosts of engineers who are devoting their lives to the study of fire-prevention, are wrong.

Were it a fact that Mr. Edison's life had been a series of triumphs, his infallibility might be allowed—but such is not the case. One notable case is the designing of a mine and reduction plant at Edison, New Jersey. Various writers have estimated the cost of this work at from $1,000,000 to $5,000,000.

The plan was to reduce ore that had proven obstinate—ore that had, hitherto, resisted all commercial efforts to make it valuable. Some of the largest crushing, grinding and reduction machinery that had been designed up to that time, was designed and installed by Mr. Edison and his co-workers. The plant was a commercial failure.

Mr. Edison gave, as the chief reason for its failure the then recent discovery of the Michigan iron-ore beds, and the alleged reduction in the cost of pig iron in the world's markets—particularly those of this country. Inquiry into pig-iron prices that obtained at the time Mr. Edison sought to put his plant in operation, and the prices that have obtained since that time, will prove conclusively that this premise is false.

WIZARDRY OR WANTON FOLLY?

The salvage claim of 87½ per cent should not, and will not, be accepted by any reasonable minded man. If but 12½ per cent of the concrete work is replaced it means nothing beyond the fact that Mr. Edison, having taken one "gambler's chance" is willing to take another. The photographs from which these illustrations were made would indicate a much greater damage, and the amount of that damage cannot be determined until every particle of the dehydrated concrete has been removed. The fact of the matter is that much more is being done. In the case of a four-inch floor, 87½ per cent salvage would mean that a mere half- inch of the surface had been injured. The writer of this article saw the workmen taking off two inches of concrete from these floors, and placing new metal reinforcement, followed by two inches of fresh concrete. This would seem a 37½ per cent salvage—instead of 87½ per cent.

And—here is the rub—when the buildings are "restored"—and look as they did before this fire visited them, they will be subject to the suspicion voiced by a member of the special committee that drafted New York City's building code—who said "After this is repaired and ready for use again, it will simply be the infusion of living blood into a corpse. It may have the glow of life, but the sure course of decomposition will continue." There will be no union between the scarred and weakened background and the newly painted scenery.

As the facts—the real facts—of the Edison fire become

better known, the men who make, sell, and believe in brick as the standard fire-resistant material will come into their own. The more extravagant the claims of salvage—the more persistent the attempt to cover up badly designed and badly executed construction, by equally ill-conceived replacement—the more will the mind of the coming builder turn to the material that has been through fires innumerable—and with an unblemished record.

We will spare you the details of reports that vary so far as the brick buildings are concerned, from one that says that the only brick building on the grounds was "uninjured" to the report, made by one of the Edison officials, that "all of the brick buildings were in ruins, while the concrete buildings were practically uninjured."

The photographs show that, wherever brick was used, it stood up—supporting, in many cases, concrete walls that were built upon it. One wall stood a heat that melted the glass in the windows—melted the sash weights—turned the limestone sill to chalk. Other brick walls, being those of buildings with wooden posts and wooden floors, stand alone—the inner works gutted. Warped steel, disintegrated concrete, wire-mesh and plaster make up the rubbish heaps—brick seem conspicuous by their absence. Evidently, what little brick there was, came through the fire very creditably.

But brick in a concrete camp has a certain usefulness—it may be made a scapegoat. That is the part it has been made to play in the accounts of the Edison fire that have deigned to mention it.

Yet, with all of this discrediting, it has not received half the set-back that has come to cement-concrete—first by its inexpert use at West Orange, and second, by the silly claims that have been made for it by the men on Mr. Edison's pay roll. The lumber interests have, even at this time, begun to use these points in their fight against concrete.

Illinois Clay Manufacturers Hold Successful Convention in Capitol City

Splendid Advance Work Brought Large Attendance and Well Prepared Papers to Thirty-Seventh Annual Clay Meeting

BALMY, SPRINGLIKE WEATHER did its part to make the thirty-seventh annual meeting of the Illinois Clay Manufacturers' Association a huge success. Away in advance of the weather man, however, was the untiring, painstaking and—this is of more importance—efficient work of A. E. Huckins, the secretary. His well-directed energy brought out the largest gathering of clayworkers ever held in the state, outside of Chicago. His persuasiveness made possible a program that will long stand as a model of what convention programs should be. The membership did its part in responding nobly to his appeal—"This is Your Convention, It Needs You and You Need It."

D. C. Haeger gave up the presidency after a year of hard, conscientious work. His successor is J. L Buckley, of Aledo, Ill. The only other change was the election of Douglas Stevens, of Cayuga, Ind., to the vice-presidency.

A resolution increasing the annual dues from $3.00 to $5.00 was carried, and with it, an amendment that called for a committee to investigate the possibility of securing a list of "contributing members"—that is, those who would subscribe a stated sum each year, based on output tonnage or sales value of their product, as shown by the records of the previous twelfth month.

The "keynote" of the convention was cost accounting. In the paper read by the retiring president, considerable emphasis was laid on the necessity of a system of cost accounting that would cover every item of manufacturing expense and overhead, and provide for replacement of buildings, kilns and machinery as they were depreciated by time and work. A system that was in successful use was afterward shown by J. L. Buckley, of Aledo, who, taking actual pages from his time book, ledger and other volumes, enlarged them and reproduced them on enameled cloth sheets that were of sufficient size to make the figures easily read.

By showing the way in which the nimble dollar was caught, hung, drawn and quartered—made to march, as it were, to its proper place in the accounting system, Mr. Buckley demonstrated the fact that it is possible to know just what each step in the process costs, and how to secure a profit from that particular step. In his accounting system, each piece of finished ware bears its share of the original plant cost, of each item of interest on capital, each penny of lost accounts, each mill of the sinking fund that is ready to replace as fast as wear and tear makes imperfect.

These were no theoretical figures—they did not show what "might" be done—they gave a practical demonstration of what was being done in the every-day conduct of a successful brick plant. Mr. Buckley was asked to deliver his talk and show his big pages at the brick convention in Detroit, and it is understood that he has agreed to do so.

The choice of Springfield as a meeting place was most fortunate, and the newly elected officers will have hard work in refusing the cordial invitation of the Springfield brick men to make 1916 a "repeater." Evidently Springfield liked the delegates as much as the delegates liked Springfield, and the efforts of Peoria men and at least one Quincy brickmaker, to secure the next convention for one of their cities, are pitted against a strong record of good treatment given by Springfield men. The service at the new Hotel Leland was excellent—the accommodations all that could be desired. The management outdid itself trying to give the convention the best that could be given.

An unavoidable delay prevented Governor Dunne's being present, and his place was taken by ex-Lieut.-Governor Northcotte, who delivered the address of welcome. A paper was read by Walter H. Bennett, state fire marshal, who spoke of the great economic waste, due to fires, and which was followed by a paper on creating a demand for clay products, by Warren Ittner, of Belleville, and one on advantages and disadvantages of central station electricity, as compared to private plant equipment, by J. F. Jones, of St. Louis. The "Build with Brick" slogan was given new life by a splendidly prepared paper, read by J. E. Randall, of Indianapolis.

The evening of the first day was marked by a complimen-

tary theater party given by the Springfield brickmakers, and, by some clever "advance work" the performers were given a line on the prominent officials of the association, which they used in the dialogue of their acts. Everyone knows what this means—this "getting together" across the footlights—and it was, to some of those who went to Springfield, the most enjoyable of the many pleasant hours they spent at the state capitol.

Tuesday morning, February 9, found the convention up and ready for business, with a busy day ahead of it. Mr. Buckley's paper on cost accounting led the morning session, he being followed by a timely address on what the net gain should be, in clay manufacture. This was read by B. H. Richards, of Edwardsville, and started a lively discussion, as the matter of net gain is something that has been somewhat unfamiliar to many Illinois clayworkers for several years. Fred. C. Schwedtman, of Springfield, gave a most interesting talk on efficiency—saying that it applied alike to the man, his men and his plant. Douglas Stevens contributed a valuable paper on keeping down costs, that gave many of the delegates considerable food for thought.

The afternoon session was opened by a paper on reciprocal insurance by P. B. Eckel, of St. Louis, who pointed out how clayworkers could save money by insuring with each other, and so avoiding the necessity of contributing to the cost of carrying risks that are more hazardous than their own. He was followed by Adrian F. Sherman, who spoke of the workingmen's compensation law, and its effect upon Illinois clayworkers. J. W. Robb, of Clinton, Ind., spoke on the electrification of a clay plant and was followed by Eben Rogers, of Alton, Ill., who had for his subject, the problems of the man who made brick and hollow ware.

The evening banquet was presided over by Dr. A. L. Converse, who apologized for his gray hairs by saying that he had gained them in trying not to put more money than he made in clayworking, into the plant where burned clay ware was made. Short, snappy addresses were made by a number of excellent speakers, none taking more than ten minutes, and none going to a point where the hearers were bored into the general attitude of those who are compelled to attend convention banquets. Good music, good food, quick service and an experienced toastmaster did the rest.

The closing day of the convention was devoted to papers by A. E. Williams, of Urbana, who gave a very valuable exposition of the experiments that had been conducted with a view of overcoming efflorescence. The discussion that followed brought out the fact that this was a topic that had bothered the clayworkers of Illinois for a long time. Mr. Williams' talk was listened to with great attention, and some of his suggestions will be taken up at the plants during the year just opened.

After the convention hall had been darkened to permit of the showing of some lantern slides that illustrated the paper "Reaching the Farmer," read by Frederic W. Donahoe, editor of "Brick and Clay Record," the subject of organizing a promotion bureau among clayworkers whose products entered into farm buildings and farm drainage, was discussed, and printed copies of the address were distributed.

This was followed by a moving picture exhibition, conducted by C. S. Holloway, of Chicago, who showed the films that are used by the National Fire Proofing Company, in its campaign among architects, illustrating the uses of hollow tile. The making, testing, shipping and laying of the tile were shown, and "skyscrapers in the building" were thrown upon the screen with vivid exactness. Sometimes, as the operator turned his crank a little faster than he thought, the workmen "speeded up" in a manner that would have made a walking delegate weep salty tears, but Mr. Holloway's admonition to "spare the feelings of the union officials" brought the men back to the usual eight hours a day speed. The pictures were again shown, in the afternoon, to a delegation of Springfield architects and contractors.

R. T. Stull, professor of ceramics at the University of Illinois, followed with a discussion of the neglected opportunities of clayworkers, and later, A. P. Grout, of Winchester, spoke of silos—their uses and construction, and demonstrated that the clay silo was the "one best bet" of the farmer who wanted to make his farm building productive. A. E. Williams then spoke of the manufacture of silo block.

The election of officers and the reports of committees followed, and the convention adjourned, to participate in an inspection trip to the plant of the Springfield Paving Brick Company, which is one of the "show" plants of the state. From here the delegates returned to their various homes.

National Builders' Supply Convention

A VARIED PROGRAM, that ran from moving pictures to the suggestion that a "business man," rather than a lawyer or a college dean, be elected president of these United States, marked one of the most successful conventions that have been held by the National Builders' Supply Association. The convention extended over two days, being held Feb. 8 and 9, at the Hotel Sherman, Chicago.

James H. Allen of Lincoln, Neb., was elected president, to succeed Edward K. Cormack, and John J. Voelkel of New Orleans, treasurer, to succeed himself. L. F. Desmond of Chicago was elected secretary.

The convention marks the close of a year that will long stand as a record for association work. The organization is bigger and stronger than ever before in its history.

A long list of papers was presented, among which were those of Floyd E. Waite, of the Society Advocating Fire Elimination, of Cleveland, Ohio; H. H. Morgan, of R. W. Hunt and Company, of Chicago, and Sol. Westerfield, of the Retail Grocers' Association, the last named speaking on the "Necessity for Legislation Permitting Price Standardization." Both led to prolonged discussion.

The clay product industry was well represented at the convention, and this is largely due to the efforts of the retiring president, Mr. Cormack, to enlist the support of this branch of the building material trade. An effort is being made to have all material dealers add common and face brick to the lines they are now carrying.

The convention closed with a banquet, which was served on the evening of Tuesday, the 9th, at which the only speaker was Charles R. Van Hise, president of the University of Wisconsin, whose subject was "Federal Anti-Trust Legislation," and the four hundred who listened to him were made to realize that co-operation and not destructive competition is the tonic that the business world needs.

Binghamton Revising Building Code

A meeting was held recently in the office of the building inspector of Binghamton, N. Y., to discuss proposed amendments to the present building code of that city covering hollow tile construction. About forty persons interested in hollow building tile were present at the meeting and another session will be held shortly.



The New Hotel Statler, Detroit, Mich. This Hotel, During the Week of Feb. 15-20, Will be the Scene of One of the Greatest "Buy It Now" Campaigns in Brick History

"Buy Now" the Slogan of the Detroit Convention

Manufacturers of Clay Plant Equipment Look for Generous Orders for Labor-Saving and Cost-Reducing Devices

FOR THREE YEARS, clay plant owners have been slow to install the machinery and equipment necessary to bring their cost of production down to a point where, without increasing their selling price, they could still make a good profit on their output. Every indication points to a change in this attitude, and the men who have perfected cost-reducing systems, appliances and machines expect a turn in the tide that will be to the mutual benefit of the men who manage the plants and those who cater to their needs.

PRESIDENT WILSON'S ENDORSEMENT of the "Buy It Now" campaign is expressed in his usual forceful language. He says: "If you are going to buy it, buy it now. That is a perfectly safe maxim to act upon. It is just as safe to buy it now as it ever will be, and if you start to buying, there will be no end to it—and you will be a seller as well as a buyer."

The homely truth of that endorsement is that you cannot expect to receive—and probably will not receive—any great share of the long promised prosperity unless you give it impetus by "loosening up."

For some time past—it is between three and four years—manufacturers of clay products have reduced the average of their purchases. By this is meant that, instead of keeping their equipment in proper condition, more than half of the plants that are running have been allowed to depreciate.

Men who know that worn out and patched machinery

Brick and Clay Record

Extends a cordial invitation to its readers to visit its headquarters on the 14th floor of the Hotel Statler



C · P · MAYER
1ST VICE-PRES
BRIDGEVILLE, PA.

EBEN RODGERS, PRESIDENT
ALTON, ILL.

CHAS · J · DECKMAN
2ND VICE-PRES
CLEVELAND, O.

costs more in spoiled ware and lost time than would be the interest upon an investment in new equipment, still continue to withhold that investment.

Brickmakers urge the public to "Build with Brick." They say that although the initial cost is greater, the economy is undoubted since up-keep is less. They preach the gospel of "invest a little more and save a great deal" but fail to practice what they preach.

They know and everyone knows, that the time is going to come, and come soon, when there will be a breakdown. Then every power—electric, steam, human and horse—will be employed to bring that new equipment to the shut down plant at the earliest possible moment. Price will be no object. More money will be wasted—then—than you even think you are saving now.

Men who have given a great deal of time to figuring out the whys and wherefores of this "holding back" movement, say that many of the plants have already reached the point where they must be completely overhauled—others say that they may hold up until next fall—but that it is doubtful. All seem to agree that the clay plant owners, for the most part, will place large orders for new equipment during the National Brick Manufacturers' Convention, now in session in Detroit.

The clay plant owner should bear one truth in mind—that any machine, device, appliance or system which he may purchase, is bought for the sole purpose of earning money for the man who owns it. The sooner it is installed, the sooner it begins making money for him. Every month that he puts off this installation loses him the amount which he might have made had he installed the machine earlier.

The same is equally true of any cost-saving device or system. The sooner it is installed, the sooner it will take up its work of saving money for you.

Cost-accounting is one of the great needs of the industry, but cost-reducing is still greater. The movement that is on foot in various parts of the country to induce builders to "build now" includes the inducement that building materials will be a little cheaper, for the next three months, than they were last year. This precludes your making larger dividends by charging a higher price.

The way to put your plant on a paying basis is to make your ware faster, better and cheaper than you have been making it. You can only do that by giving your men better equipment with which to work.

Join the army of progressive clay products manufacturers and aid a movement that is as patriotic as any that has ever gone before—"Buy it Now" and start Prosperity's clock ticking.

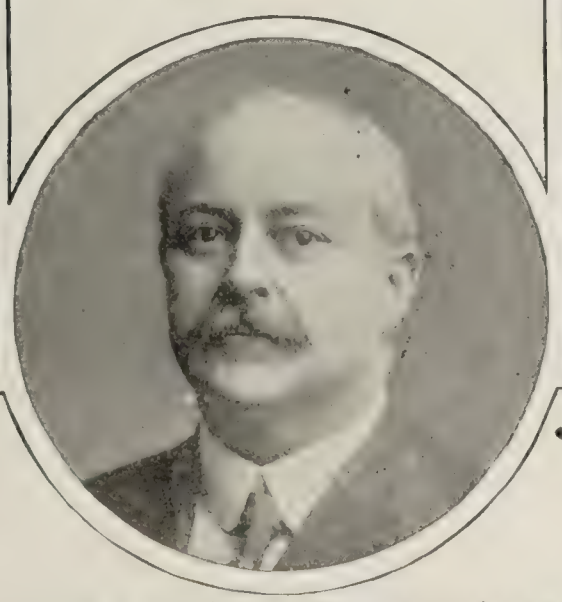
Machinery and Equipment Manufacturers and Representatives

(The following list is made up of those who have written "Brick and Clay Record" that they will attend the N. B. M. A. Convention, together with room numbers at the Hotel Statler, so far as reservations had been made up to February 13.)

AMERICAN CLAY MACHINERY COMPANY; R. C. Penfield, L. W. Penfield, R. O. Perrott, C. B. Sharer, H. S. Simpson, L. E. Dow, J. P. Martin, L. Haigh, Davis Brown, F. L. Hopley, C. P. Mertens, W. R. Cunningham, Preston Penfield and Harold Penfield
ANDERSON FOUNDRY & MACHINE WORKS, 14th FLOOR; W. N. Durbin
ARBUCKLE & COMPANY; Mr. Kelly
BAIRD MACHINE & MFG. COMPANY; W. J. Baird
BONNOT COMPANY, Room 548; A. A. Oldham, Roy G. Smith, A. W. Aylesworth
CANTON GRATE COMPANY, 14th FLOOR; Elmer E. Miller
CERAMIC SUPPLY & CONSTRUCTION COMPANY; H. C. Arnold
CHAMBERS BROTHERS COMPANY; A. R. Root
CHASE FOUNDRY & MANUFACTURING COMPANY; A. J. Dunn, F. A. Fleming, H. L. Killiam, S. M. Chase, and the E. C. Humphreys Company
CLEVELAND ALLOYS COMPANY, 14th FLOOR; Bernard Bigsby, Jr., and E. J. Mellen
DEWEY BROTHERS, INC.; T. A. Dewey
DODGE SALES AND ENGINEERING COMPANY; C. A. Mattison
DUNN WIRE-CUT-LUG BRICK COMPANY, ROOMS 236 AND 238; Frank B. Dunn, William C. Perkins, Frank T. Townsend, William T. Blackburn and F. A. Churchill
CHARLES ENGELHARD; R. W. Newcomb
J. D. FATE COMPANY; George B. Drennan, G. A. Anderson, H. R. Sykes, H. J. Votaw and H. H. Fate
E. M. FREESE & COMPANY; H. H. Freese, A. J. Freese, B. E. Place, E. L. Hess, R. A. Whiston, F. H. Robinson and G. R. Hess
JAS. W. HENSLEY; Jas. W. Hensley
HOOK PATENT KILN COMPANY; H. P. Jenks
LAKEWOOD ENGINEERING COMPANY; D. L. Wadsworth and W. A. Meddick
MARION STEAM SHOVEL COMPANY, 14th FLOOR; F. H. King and H. L. Cox
MATHEWS GRAVITY CARRIER COMPANY; James A. Pollak
MECHANICAL RUBBER COMPANY; Ohio Rubber Company
OHIO KILN COMPANY, 14th FLOOR; J. E. Wiltshire
RICKETSON MINERAL PAINT WORKS; Frederick C. Bogk
ROESSLER & HASSLACHER CHEMICAL COMPANY; Werner Malsch, Otto W. Will, Harry W. Smith and Walter Schapper
SCHAFFER ENGINEERING & EQUIPMENT COMPANY, 14th FLOOR; J. C. Schaffer
CLAUDE SMITH COMPANY; Claude Smith
STANDARD DRY KILN COMPANY; Robert Elliott, E. DeGroot and Harry Wirsching
STEPHENS-ADAMSON MFG. CO., ROOM 1411; Colby M. Avery
STEVENSON COMPANY, ROOMS 361-363; C. G. Stevenson and Thomas A. Hibbins
STUPAKOFF LABORATORIES, 14th FLOOR; W. H. Gibb and H. L. Clark
THEW AUTOMATIC SHOVEL COMPANY; D. D. Deeds
THWING INSTRUMENT COMPANY; Dr. C. B. Thwing
TRAUTWEIN DRYER & ENGINEERING CO.; J. Otto Trautwein
WELLINGTON MACHINE COMPANY; H. S. Bennett, R. C. Bennett and D. J. Strickland



FRITZ SALMEN
3RD VICE-PRES
SLIDELL, LA.



T. A. RANDALL, SECRETARY



JOHN W. SIBLEY
TREASURER
BIRMINGHAM, ALA.

Brick and Clay Record

Has a warm welcome and a unique souvenir for visitors who will call at its headquarters on the 14th floor of the Hotel Statler



OFFICERS OF THE PANAMA-PACIFIC CLAY PRODUCTS ASSOCIATION.
Herman L. Matz. William P. Varney Charles Bonner

The delegates who attend the National Brick Manufacturers' Association at Detroit will hear something about the Panama-Pacific Clay Products' Association, and about the work it is doing for the benefit of brickmakers all across the country. A strong representation from the organization that has built a brick residence on the exposition grounds will be present to address them, Herman L. Matz, William P. Varner and Charles Bonner being present.

Reports from the exposition are encouraging, and, while the work of building was delayed by bad weather, the house is well on its way to completion. Literature telling of the work of the association, and describing the way it expects to conduct its publicity campaign will be distributed. An address will also be made by one of the architects who drew the plans for this very interesting example of medium priced brick architecture.

J. Edward Frid Elected President of Canadian Clayworkers

Greaves-Walker of Toronto Made Vice-President and Gordon Keith, Editor of "Canadian Clayworker" Secretary

WITH THE MOTHER COUNTRY involved in the most serious conflict of modern times, and with the financial condition of its members not overflourishing, the Canadian National Clay Products Association held a most helpful and enthusiastic convention at the King Edward Hotel, Toronto, January 26, 27 and 28.

The program was excellent from the opening words of President Miller's address of welcome to the last number at the banquet on Thursday evening, which for attendance and a general good time, surpassed anything ever held by the association.

After President Miller's able talk in which he congratulated those present on their loyalty in attending the convention in the face of many handicaps, Mayor Church of Toronto gave a royal welcome to the visitors and presented them with the keys of the city. The mayor was followed by "Dan" Lochrie, chairman of the entertainment committee, who told the members what a good time was in store for them. The remaining part of Tuesday afternoon was taken up by routine business of the association and the election of officers for 1915.

In the evening, the members were the guests of "Dan" Lochrie at the Park theater, of which he is the proprietor. In addition to the regular program there were special moving pictures showing the value of using clay products.

The first paper read on Wednesday morning was by Andrew Kruson, of the Sun Brick Company, Toronto, on "Cheap Glazes for Use on Ontario Clays and Shales." Following Mr. Kruson, Dr. A. C. McKay gave a description of the new technical school in Toronto. In this connection, it might be said that a course in ceramics will be included in the curriculum of the Toronto Technical Schools this coming year.

"Kiln Kinks" was the subject of a very comprehensive paper read by A. F. Greaves-Walker. W. W. Pearse followed with a talk on "Brick From an Engineer's Viewpoint."

After the discussion of the latter paper, which called for information on the standard use of clay products, Millard Gibson and Gordon Keith were appointed to collect data on this subject. They were also asked to get in touch with the architects' association, and, ifpossible, arrange for an address on clay products to be given at the next annual meeting.

William Burgess then read a paper on "Burning and

Kiln Design," after which a discussion on this and Mr. Walker's paper took place, bringing forth much valuable information on kiln practices.

The Wednesday afternoon session was closed with a paper by P. W. Greene on "Standardization of Clay Products from an Architect's Point of View."

In the evening, the convention was entertained at Shea's Theater, being the guests of the entertainment committee.

J. C. Amer, manager of the "Canadian Clayworker," gave the opening address on Thursday morning on "Concrete Suggestions for Promoting the Use of Clay Products." Mr. Amer was followed by W. W. Smith, of Shallow Lake, Ont., who spoke on "The Making and Burning of Clay Drain Tile." George P. Fisher, ceramic engineer, with the Dominion Sewer Pipe Company, Aldershot, followed with a paper on "Underdrainage."

At this point, W. McCredie reported for the drain tile publicity committee. He strongly urged that the members of the association turn more of their attention to supplying the needs of the farmer in burned clay, and that they carry on an advertising campaign to reach the farmer, who is at present the most prosperous man in Canada. He urged that the farmers be taught the advantages of better drainage and how it would increase the productive power of their land.

The first paper at the afternoon session on Thursday was read by Gordon Keith on, "Plant and Product of the Government Brick and Tile Company, Mimico, Ont." He was followed by E. W. Knapp, of the Sun Brick Company on the "Possibility of Manufacturing High Grade Paving Blocks in Ontario." The last paper of the convention was by John S. McCannell, president of the Milton Pressed Brick Company, on "Steam Shovels for Handling Clay and Shale."

The crowning feature of the convention, so far as numbers and enthusiasm is concerned, was the banquet given on Thursday evening at the Prince George Hotel. The presence of the ladies added greatly to the gay effect and the music by the orchestra enlivened the gathering. "Dan" Lochrie was toastmaster and filled his part very well. There were many solos and quartet selections, but perhaps the singing that was enjoyed most by all was when every one joined in and sang patriotic and other popular songs. The speeches were short and to the point.

At the annual election held on the opening day, Tuesday, the following officers were elected for the ensuing year: President, J. Edward Frid, Hamilton; first vice-president, A. F. Greaves-Walker, Toronto; second vice-president, Thomas Kennedy, Toronto; third vice-president, William Burgess, Todmorden and secretary-treasurer, Gordon Keith, Toronto.

Advertising in Colors

Very shortly after the first rough texture brick was put upon the face brick market, and the beauty of variegated shading was made manifest by the grouping of several samples, the day of advertising face brick by using black and white cuts was gone.

Much time, thought and money has been spent on color reproductions and it is but lately that these have been at all convincing.

The trouble was that, in order to make a small cut of a large number of brick, it was necessary to "reduce" and this "reduction" almost invariably intensified the color of the brick. As a consequence, these reproductions were very much more brilliant than the brick themselves—in point of fact, so brilliant that no one would care to use them in the outer walls of a house.

The earlier reproductions in color were very much like kitchen oil cloth and while the manufacturers of face brick tried to convince the people whom they were trying to reach, that the brick had a soft "rug like" color, the color reproductions belied the statement. There is considerable difference between an Oriental rug and a piece of linoleum.

Color reproductions, however, have been very much improved, as will be seen by the advertisement of the Alliance Brick Company, of Alliance, Ohio, which appears opposite page 382 in this issue of "Brick and Clay Record."

Not only are the various colors shown with vivid exactness, but the texture is reproduced most convincingly.

The fact that the Alliance Brick Company is able to secure such splendid color work is a cause for congratulation and the enterprise in adopting this method of advertising is much to be commended.



THE MEN WHO ATTENDED THE INDUSTRIAL CERAMIC COURSE AT ILLINOIS UNIVERSITY.

1, John Broughton; 2, W. J. Powell; 3, J. J. Bishop; 4, R. D. Ferguson; 5, E. A. Kretz; 6, R. K. Hursh; 7, J. J. Sherwood; 8, I. Hunter; 9, F. L. Wolf; 10, J. W. McIntosh; 11, W. C. Holmes; 12, A. B. Agnew; 13, H. C. Steinmeyer; 14, A. A. Yegge; 15, A. V. Bleininger; 16, Chas. Mahn; 17, H. P. McMillan; 18, A. E. Williams; 19, Carl Batliner; 20, M. O. Cain; 21, Chas. A. Lano; 22, J. H. Porter; 23, R. T. Stull; 24, C. L. Walduck; 25, E. B. Swoyer; 26, H. Busk; 27, H. A. Bish; 28, O. A. Harker; 29, Geo. Elston; 30, W. I. Murray; 31, Clarence Richards; 32, T. H. Mitchell, Jr.; 33, J. C. Herman; 34, W. S. Staler; 35, K. I. Fulton; 36, Geo. A. Loomis; 37, A. V. Sturgeon; 38, E. B. Merry; 39, W. P. Brannon; 40, S. D. McGrew; 41, Fred M. Luth; 42, Chas. Hamm; 43, L. R. Nuding; 44, L. L. Stephenson; 45, Douglas Stevens; 46, R. R. Danelson; 47, Henry F. Krieg.

Burned Clay

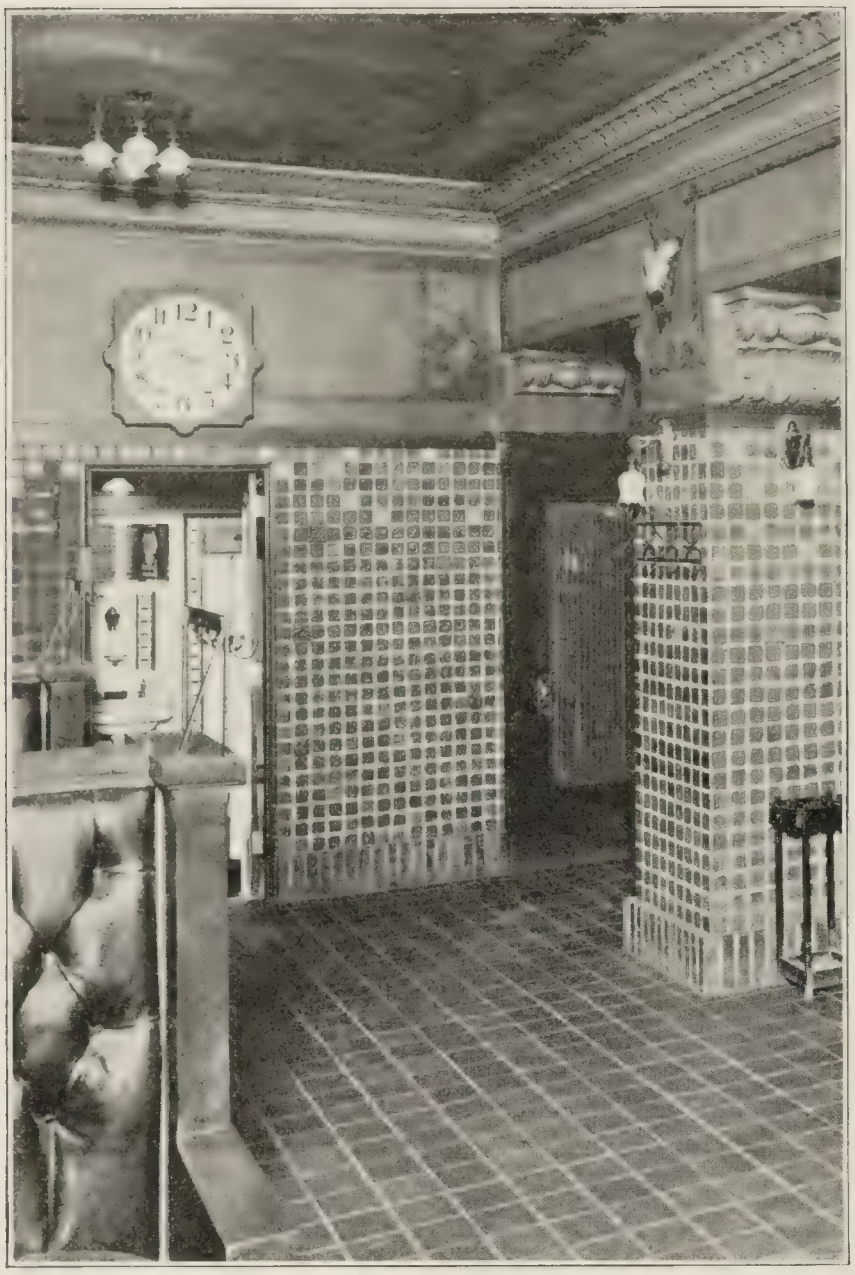
As an Imperishable

Interior Decoration

The Growing Popularity of Colored Tile and Brick Finds Another Example in a Buffet at Seattle, Washington

BEAUTY AND ECONOMY go hand in hand when burned clay is used to take the place of fresco, paint and plaster. Some of the best examples of its use are found in the Far West, and one is here offered that merits more than passing notice.

By J. H. Longfellow



One End of the Dolan Buffet in Seattle, Showing Panelled Arrangement of Commercial White and Imported (English) Decorated Tile. The Toilet Partitions in the Lavatory that is seen in the Rear, are entirely of tile, and measure but two inches between the finished surfaces

SEATTLE, Washington is fortunate in having, as it were "in her midst," a man like William W. Kellogg, who does things in burned clay that, seemingly, no one else can, or will do. Some time ago, this magazine published an acount of another Seattle building, where burned clay had been used in the interior with rare judgment and exquisite taste; now it gives another instance.

In that case, it was the Germania Restaurant—now it is Dolan's Buffet. Men who see beauty in burned clay, and who appreciate its intelligent use, may sing "Deutschland uber Alles," in one place and "It's a Long Way to Tipperary," in the other, so showing strict neutrality.

The structural designing of this buffet was done by Bebb and Mendel, architects. The design and detail were Mr. Kellogg's. Judge, from the illustrations, how well he handled the problem. To begin with, the floors are all laid with 6x6 Welsh quarry tile, bright cherry red in color. The wall wainscot and bar front start from a base 8½x 2½ very dark and highly vitrified pavers. The walls are faced with 2¾x2¾ French quarries, made by the Moravian Pottery and Tile Works.

These tiled walls start, at the base, with dark red tones, purples and browns, and shade up, gradually, to very light orange reds, finishing at the top in a dentillated border or cap of glazed tile, ranging from blue to green, with shaded variations of both colors.

Scattered about among the red tile of the wainscot are single tile modeled after ancient tile that were brought from Normandie. These are in unglazed red, with itaglios in unglazed greens, blues and blacks.

The tile is laid with very wide mortar joints, made up with coarse Monterey sand and light colored cement, with enough ochre to give them a warm, yellow-gray tone. When the mortar had partly set, it was well washed down with a sponge soaked in water, and this brought out the sandy texture, so that it appears very like a worn sandstone. These walls have from time to time been gone over with a cloth dampened in boiled linseed oil; this, with the regular cleaning and scrubbing, has given them a wonderful richness of color and a dull gloss so typical of the fine old floors of Southern Europe. The joints in the base course of paving brick are colored with the blackest mortar color obtainable, and this gives a continuity to the base that adds strength to the supporting brick, which are laid on end, in what is known as a "soldier course."

Light cement and white sand give a comparatively light color to the joints in the tile flooring. The ventilation is carried out by an unique interlocking arrangement of the brick used in the two sets of steps, one of which is shown in one of the illustrations.

The woodwork is oak, stained a warm, rich brown, flat waxed. Rich brown leather upholstery is used throughout. The ceilings are finished in a very deep old ivory tint, touched with polychrome in the moldings and decorations.

The tile work in lavatory is made up of a combination of the regular commercial glazed white tiles set off in panels with decorated tiles in a very conventional pattern of mottle white and green made by Conrad Dressler, one of England's foremost sculptors and ceramists.

The partitions to the toilet stalls are made up entirely of tiles set on a very thin wall of small angle steel and expanded metal lath, making an extremely rigid wall and but 2 inches thick from tile to tile. At all corners the slats interlock into the walls with bead and core corners. The use of stall partitions of this character does away with the necessity of using marble slabs, the colder grayer tones of which seldom if ever harmonize with the

warmer colorings of the tile—aside from their now sanitary qualities.

The ceilings, floors and walls of the buffet kitchen are finished with white tile and large radius coves and beads at all angles.

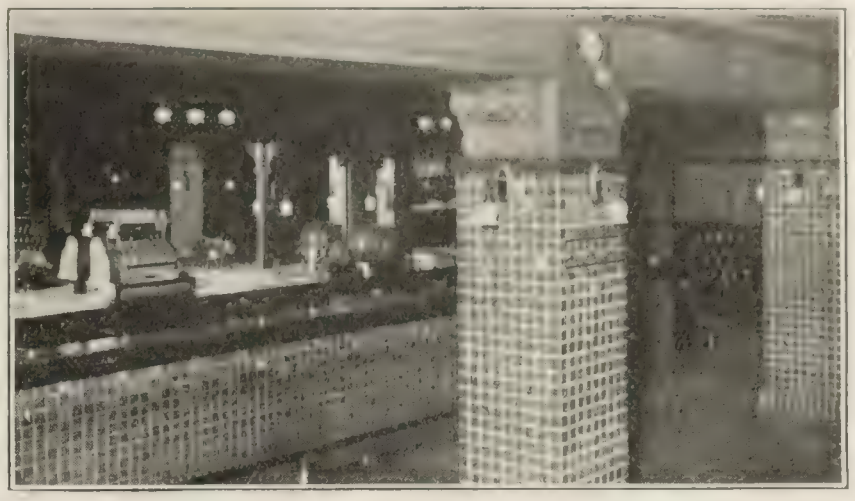
The designer's original scheme as submitted to the architects contemplates the carrying out of all the decorations in Aztec and Mayan motifs taken from the copies of original designs as taken from the walls of the various ruins in Central America by the Smithsonian Institute.



Wall Opposite the Bar. Note the Gradual Change of Color Tone from Dark to Light, Starting at the Brick Base. The Dark Lines across the Steps are Openings for Ventilation and are made by a special interlocking arrangement in the paving brick

The tile work terminated in a heavy oak plate rail supported on brackets with modeled ends typifying the day signs of the Mayan Calendar.

Above the rail was a broad stencilled frieze of the various religious and triumphal processions done in the particularly low toned and decorative colorings used by the Aztecs, outlined with dark brown. Above all a heavy and elaborately denticular cornice of the dentils carrying



View of the Bar, Showing Cozy Corner at the Far End

out various calendar signs. The beams were carried on brackets made after various masques, clay reds, old blues, grays, greens, white and ochre colorings predominating. Owing to the architects fearing that the scheme might prove too vivid in colorings and new in design this scheme was given up for more conventional decoration—much to the designer's regret.

The whole work is an interesting study in the use of burned clay for interior work, and is one of many examples of the splendid use of tile and brick that can be placed to the credit of one of America's foremost exponents of burned clay—William W. Kellogg, of Seattle.



General view of Buffet. The opening into the tiled kitchen is shown at the right of the last column

Salmen Brick Company Leads Fight Against Concrete

Engages Well Known Construction Engineers To Disprove Statements Made by City Employes in New Orleans' Cotton Warehouse Conference

NEW ORLEANS, the scene of the last N. B. M. A. convention, has been made the stage for a very lively contest between reinforced concrete construction and that of brick. The brick champion has been the Salmen Brick and Lumber Company, of Slidell, La., while the claims of concrete have been, for the most part, set forth by the city engineers, Ford, Bacon and Davis.

The contest has been waged around the proposition of building the new cotton warehouses. The city engineers reported in favor of reinforced concrete, giving, among other reasons for their support of this construction, the "unusual" loading resulting from the use of overhead traveling cranes, which, it is claimed, are to be used "at high speed." Stress was also laid on the "necessity" of supporting these cranes on the side walls and on the fact that their operation "at high speed" would result in the eccentric loading of the walls—claiming that this could only be satisfactorily met "by a design which permitted great structural strength in these walls."

W. W. Crehore, who took up the cudgels for brick at the behest of the Salmen Brick and Lumber Company, stated, in a paper which he submitted to the Board of Commissioners of the Port of New Orleans, that, in his business of designing, supervising and consulting engineer, he had gained an intimate acquaintance with many kinds of construction, both heavy and light, particularly of factory and warehouse construction, and that his position on the general subject of material was neutral —when conditions favored the use of concrete, he used concrete, but that when conditions favored brick or steel, or a combination of both, he used the form of construction that was most favorable.

He said further that he was positive that the prevailing market conditions in New Orleans and in other localities favored the use of brick and steel construction as the more economical and more satisfactory method for warehouses, such as those planned. He added that a year ago market conditions favored the use of reinforced concrete far more than they do today.

He pointed out that, as stated by the engineers employed by the city, the crane capacity contemplated was that of four tons and that the approximate weight of the crane and carriage would bring the total moving load up to ten tons on one rail. These loads, he stated, were insignificant as crane construction usually goes, many warehouses and erecting shops being fitted with cranes of fifty, seventy-five and even one hundred tons total weight.

The element of "high speed," he explained, had been stated as approximating ten miles per hour, which in itself meant a velocity on the track of a little less than fifteen feet per second. "It can hardly be intended," he said, "that this velocity shall prevail in moving the load longitudinally on the carriers itself (that is to say, crosswise of the building), for in that case, since the distance between the walls is only thirty-two feet, the velocity of fifteen feet per second could only be maintained for one and one-half seconds before retardation must begin. It is, therefore, not probable that the thrust developed by motion at this speed crosswise of the building is intended to be sustained, or absorbed by the crane runway girders."

Mr. Crehore gave a further analysis of the claims of the city's engineers and, basing his conclusions on strictly engineering lines, proved that steel and brick construction would answer the purpose as well, if not better, than reinforced concrete.

Regarding the monetary advantage of using brick and steel, he said: "From estimates and comparisons of designs recently made, the writer is convinced that, at the present market prices, when fabricated structural steel can be laid down in New Orleans at $2.50 per 100 lbs., a design for this whole warehouse plant, having steel framework, fireproofed with brick for the verticals and concrete for the horizontals, would show a saving in the contract of at least One Hundred Thousand Dollars."

In conclusion, he made some statements regarding concrete construction that are of great importance. They are: "It should be emphatically noted in this connection, that a reinforced concrete column, pilaster or wall is not really fireproof unless two full inches of concrete protect the outside of the effective section, that is, unless at least three inches of concrete lie outside the reinforcing rods. When this has been done, and not until then, may the reinforced concrete design be considered as efficient for all purposes as the steel and brick."

F. W. Fitzpatrick, well known as an expert in fireproofing materials, made some very effective arguments, scoring the conclusions of the city's engineers and, taking the presentation for concrete, as made by Mr. Davis, he said:

"Mr. Davis states in his letter that he adopted reinforced concrete because it was the most fireproof material, another extraordinary statement. Brick—the world over and by all authorities—is conceded to be the only inherently fire-resisting material, and resort is had to concrete most generally because of some difficulty in securing brick. To make concrete fire-resisting, the reinforcement must be placed at a safe distance from exposure to heat, a precaution Mr. Davis seems to have sadly overlooked or otherwise neglected.

"He makes the point that in concrete the advantage lies in being able to use unskilled labor—exactly the thing that so often downs concrete. To make concrete at all comparative to brick, it must be well done and by skilled labor. Its quality of cheapness, when and where it has it, is in its *being made by cheap labor* and otherwise "skinned." To that very fact of cheap labor is due half of the fatal collapses of concrete structures, even while being erected, that have occurred in the past few years. One at Youngstown just the other day, involved the loss of structure and the loss of life, yet the building was being erected by the biggest contracting com-

pany in the country and architects and engineers of the highest reputation. Do you want to take the chance of your buildings collapsing because Mr. Davis prefers to use cheap labor? He is just as liable to have an accident occur under his supervision as were the Fuller Construction Company, and the other big companies who have had disastrous collapses. Witness the Sixty Hotel failure (California), the Aetna Plant at Pittsburgh, the hotel collapse at Trenton, the Carnegie Library at Binghamton, and the all too long list of reinforced concrete buildings that have collapsed in the past few years."

A. W. Shaw followed with a paper in which he considered the question of stresses and thrusts, and treated the subject from a highly technical standpoint. He said in part:

"In spite of statements of the press, both popular and technical, brick stands at the front as a fire-resisting material of construction. In support of this, attention is called to the usual manner of failure of brick buildings which have gone through severe fire tests. First, it is to be noted that practically no reinforced concrete buildings and no steel buildings have wooden floors, roof joists and partitions, though this has been the common type of construction in connection with brick buildings. This highly inflammable material not only assists in raising the floor joists and other wooden members that form an integral part of the structure, but, in failing, they break down the brick walls, either by the unburned ends prying the bricks loose as the center fails, or by the jar resulting from the falling of the wooden floors and their loads. In spite of such forces acting on the brick walls as the result of the burning of the contents of the building and its wooden members, many a brick wall stands for a generation after the other materials have disappeared, as a monument to the durability of the brickwork. Probably every member of your board has seen the ruins of a dozen burned sugar houses, which will support this statement.

"After the San Francisco earthquake and fire, special committees were appointed by the American Society of Civil Engineers to make a detailed and disinterested study of the entire affected area in California and more particularly of the city proper. One of these committees was charged especially with the duty of examining the damaged buildings of San Francisco and to make specific recommendations as to the proper type of building to be used in replacing those which were destroyed. Steel was chosen as the ideal framing material, owing to its ability to withstand the tremors of earthquakes, and its inability to withstand high temperatures was recognized in the following recommendations, which are quoted for the final summing up of this special report: 'In the writer's judgment, the column should be of the closed type, such as channels and plates. This is preferable to latticed columns. For columns, the fire proofing that will stand up the best is red brick set in Portland cement mortar. Equal to this is the casing of solid concrete at least four inches thick with a mesh of reinforced metal.'"



PASS-TEX. BRICK

A Beautiful Rough Texture Brick in Various Desirable Shades

"MADE IN EL PASO"

E. HEWIT RODGERS, MGR.

An Effective Way to Advertise Brick

E. H. Rodgers, the genial brother of the N. B. M. A. president, went down to Texas, some time ago, to regain a little lost health. While he was there, it occurred to him that El Paso needed a brick plant, and, as a consequence, and since he wasn't doing anything else, he started one.

He also started to do a little advertising—the accompanying illustration is one of his "dodger" cards which are printed in green, yellow and blue. The slogan, "Let the Little Trees Grow," is attractive, and right with it, he brings in the thought of "Safety First." Tied on to these is the best of all slogans—"Build with Brick."

The cards are well designed, and well printed. Our good friend Rodgers is showing the Texans how to incite interest—it may be that he can show some of the men whose plants are much farther away from the Mexican border.

Pictorial advertising pays. No matter how old we grow, we still would rather read pictures than print. The wise advertiser puts a little interest into his selling talk, and it cannot always be done by showing a picture of what you want to sell. The trees and the brook in this Rodgers ad. are stronger than a brick wall, when it comes to putting over the selling argument.

Judge Stevens Looks for a Good Year.

"Brick and Clay Record" was favored by a visit from Judge Stevens, of Boone, Iowa, during the week following the Iowa convention. He spoke of the prosperity of Iowa's farmers, and said that he looked for a banner year in 1915—the "Year of Promise." Judge Stevens is of the progressive type of clayworkers, his plant having been remodeled, and fully equipped with electric-motor driven machinery.

Reaching the Farmer

The Sixth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XIV.

Advertising Drain Tile.

THERE IS AN IMPRESSION among drain tile manufacturers that unless there is an abundance of rain the farmer takes but little interest in tiling. This belief has taken deep root, and is responsible for the saying, "We Reap When the Skies Weep."

So popular is this belief that it has had a tendency to discourage nearly every attempt that has so far been made to convince the farmer that drainage pays in dry, as well as in wet weather. A few manufacturers, believing that the wider dissemination of an undoubted truth would result in a succession of fat years, instead of a "streak of fat and a streak of lean," have given their moral support—a few have aided financially—but the movements have, for the most part, died in infancy from lack of nourishment.

In seems, therefore, that we must first convince ourselves that drainage pays the farmer, in season and out, through wet and through dry. *If we do not believe it we will have poor success in making the farmer believe it.* And, after we have succeeded in convincing ourselves that the idea is all right, and that there really is *a big profit to the farmer* in land drainage, we must ask ourselves whether we are able, or not, to transfer that conviction from our minds to the minds of the men who own the farm lands.

A few years ago the farmer was a "hard nut to crack"—for the simple reason that he made very little money—had very little money to spend, and did a whole lot of making up his mind before he decided to part with a single penny of that hard earned cash. Today it is very different. The farmer has become generous, with himself, with his family, and with his farm—because he can afford to be.

We need not accept the statement that better drainage means bigger crops, just because it has been found so by *experiment.* Actual results on farms right in your own state *have proven* that with the use of more drain tile crops have been increased in some cases, as much as three times the previous production. This is due to the fact that drainage removes all of the surplus moisture from the soil, making it more porous, and so providing a maximum amount of nourishment for the plant roots.

What more convincing facts, how much better argument could we desire on which to base an effective advertising campaign to promote the use of more drain tile, than those which have been enumerated above? Other manufacturing interests, having far less material with which to work, have done wonders in increasing the demand for their product by well-planned advertising campaigns, when prior to their advertising activities they had, in many cases, a stagnated market.

While the Du Pont Powder Company has not had a stagnated market for its product, in the strict sense of the word, there are few of us who can think of many uses for dynamite, nitroglycerin or powder, other than for blasting purposes or for the manufacture of ammunition.

The fact that the sales of Du Pont Company to the farmers of this country enjoyed an increase in four years of over one hundred and fifty per cent, dispels all doubt as to this company's rapidly expanding market. And this increase is not in the old stumping states of the North Central and Northwest, but mostly in the Atlantic Coast States, and largely for purposes other than land clearing.

During these four years the Du Pont Company has created and established a new system of agriculture, and has made dynamite a mercantile commodity.

But how did the the Du Pont Company succeed in making such wonderful advances in persuading the farmer to use this new method of "vertical" farming? *By advertising —the free use of "printer's ink."*

To educate the American farmers in the use of dynamite the Du Pont Company has spent more than a half million of dollars in advertising and demonstration. The principal advertising mediums have been the agricultural press and moving pictures. All good farm weeklies and monthlies have been used, and films made by large motion picture companies have been shown in practically every "movie" theater in the country.

Crews of demonstrators were sent out through farming territories to give public, locally-advertised demonstrations. Steel store signs and fiber fence signs were supplied to dealers.

"To take care of farmers who wanted dynamite used on their farms, but who preferred to hire experts to do the work," the Du Pont Company goes on to say, "we secured the names of experienced blasters and referred farmers to them. Blasters being few and far between, we advertised agricultural blasting as a new profession, taught men how to do the work, and now have a list of nearly a thousand blasters to whom we can refer prospective users. We supply blasters with fence signs, handbills, mail circulars, envelope inclosures and free stationery. We also pay them for free demonstrations that result in work for them."

Is this not enough to make drain tile manufacturers sit up and take notice? While it is true that there is hardly a single drain tile maker in this country who could follow this splendid example, it is reasonable to believe that any state organization could secure equally wonderful results from an equally well planned campaign.

The United States Department of Agriculture is now making exhaustive tests of cement drain tile. These tests are to extend over a number of years, and will, no doubt, be conclusive. The fact that the government has seen fit to spend so much time and money in the testing of cement tile is an indication of doubt as to its efficiency and durability in draining lands. We know that cement tile will not withstand the chemical action of alkali lands. *But let us not sit down and wait for a government report to condemn—or possibly endorse—the use of cement drain tile.* Let us be up and doing. What? Advertising—telling the farmer what he ought to know about *our* product.

CHAPTER XV.

The Fundamentals of Good Drain Tile Advertising.

The biggest appeal that we can make to the farmer in behalf of drain tile is that it will increase the productive power of his land—help him to raise bigger and better crops. No matter how varied a series of ads for drain tile may be—no matter how different the headlines—the centralized thought should be that better drainage produces bigger crops.

What could be a more propitious time than *now* to start an advertising campaign that would burn the words *"better drainage means bigger crops"* into the mind of every farmer in this country and Canada? Right now, when the price of wheat and all other grain has been advancing with leaps and bounds, and with a good demand for these commodities in sight for a long period.

Every farmer in the land who is growing these grains is becoming deeply interested in "intensified farming"—the science of making two stalks of wheat grow higher and larger where only one puny stalk grew heretofore. Every farmer is anxious to get as much as he can out of this good market. In most cases he cannot buy additional land on which to grow a bigger crop, first, because his capital is limited, and, secondly, because in many localities an additional acreage of good farming land is not easily obtainable. He, therefore, is turning his attention to the production of a bigger crop from the land he already has, and he is ready to listen to anyone who can really tell him how to grow this larger crop on the same acreage as he had last year.

These facts would play an important part in determining the kind of "copy" to be incorporated in a campaign for drain tile that would be launched, for instance, right now.

The digging up of these facts and putting them into concrete form is called "sales analysis," and is the first step to be taken in planning an effective advertising campaign. The nature of the advertising "copy" and of the whole campaign is usually determined by the attitude of the prospective customer, which is found by "analyzing the field."

For a clay products promotion bureau operating in a single state, the analysis of its field would not be a difficult task. Any good advertising man, after some careful study, could determine just what angle his "copy" should take in order to convince the farmers that their future welfare depended upon a more extended use of drain tile —that tile to be made of burned clay.

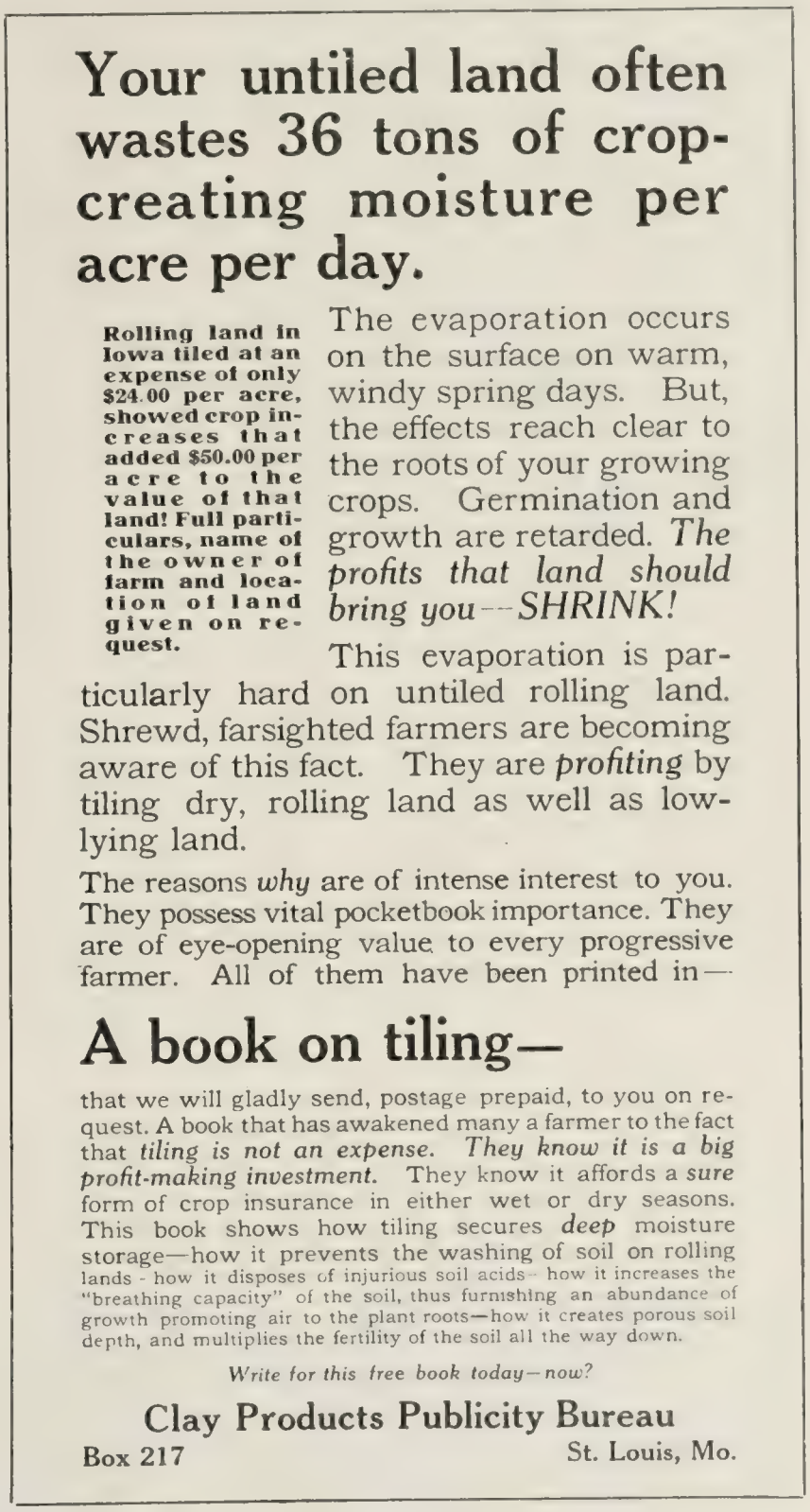
The work of choosing the proper mediums for this advertising would not be at all difficult. As has been previously stated, the farm journal is by far the best way to reach the farmer, and since there are seldom more than two or three standard farm papers in each state the choice would be singled down to the best of these, or possibly the campaign would be sufficiently large to cover all three papers.

It is not the province of this article to set down hard and fast rules to be followed in the advertising of drain tile. Such a course would be impractical, as well as impossible. But rather it is intended to show the maker of drain tile how great are the possibilities for creating a bigger demand for his product through advertising and publicity.

There are many drain tile manufacturers who hold the conviction that drain tile is a staple on the farm, much the same as sugar is a staple in the corner grocery. Most every one buys some sugar, the quantity depending upon the particular needs of the purchaser.

These same manufacturers believe that if a farmer has a piece of swampy or wet land on which he wants to produce something beside mosquitoes he will come and buy some tile with which to drain his land, and that advertising is entirely superfluous in bringing the tile maker and the farmer together.

Those who believe that this is the limit and extent of the drain tile business have failed utterly in grasping the real possibilities of their chosen calling. They have emphasized the most unprofitable end of their business,



This Specimen Drain Tile Ad., Prepared by a Trained "Copy" Writer, Is a Sample of the Kind of Advertising That Would Be Possible With An Organized Bureau

and have overlooked entirely the enormous market that a comprehensive campaign for better drainage would create.

The drain tile manufacturer is just at the daybreak of opportunity. But the extent to which he will keep step with the prosperity of the farmer will largely be determined by his liberal use of printer's ink.

The next article will be devoted to the discussion of silo block advertising, in which we shall attempt to outline the basic principles involved, so as to make it clear to the man who makes and sells this form of burned clay what can be done to expand his market.

Government Aiding Domestic Manufacture of Goods Formerly Made Abroad

In recent months the Bureau of Standards, of the Department of Commerce, Washington, D. C., has been conducting experiments for the purpose of determining the utility of American materials for the manufacture of certain articles heretofore imported almost entirely from Europe.

Up to the present time, practically all the porcelain crucibles and dishes used in chemical laboratories throughout the country have been imported from Germany. Two years ago the Clay Products Section of the Bureau undertook to ascertain whether or not American materials were suitable for the manufacture of this porcelain. The investigation developed that clays existed in this country from which such wares could be made and which were equal to the foreign product so far as their resistance to temperature changes is concerned, a quality absolutely essential in this ware, but owing to impurities in the clay the ware was defective in color. Recently, the Clay Products Section has developed a method of purifying the clay, which makes possible the manufacture of ware of good color, a detail important not only in this particular ware but in all white-wares. One concern has taken up the manufacture of chemical porcelain, and while the process is yet somewhat in the experimental stage, it is probable that in a short time all varieties of such ware will be made in this country.

In the manufacture of chemical porcelain and similar products, leadless glazes are the only ones that can be used. For this reason and on account of the poisonous nature of the lead compounds used in making the usual type of white-ware glaze, the Bureau has been conducting an experimental study in the field of leadless glazes.

The use of lead compounds has given rise to wide-spread agitation concerning its deleterious influence upon the health of workmen under conditions permitting careless operation and neglect of ordinary sanitary precautions. A study of American white-ware potteries shows, however, that such conditions do not prevail and that in reality the ill effects due to plumbism are very slight in extent. It cannot be denied that there is a potential danger, but white-ware and china glazes, made with lead compounds, may be used under proper conditions and by observing suitable precautions, without any danger to the health of the operatives. On the other hand, wherever leadless glazes can be developed and used, such precautions, which in themselves increase the cost of manufacture, do not have to be taken and every element of risk is thus eliminated to the mutual advantage of both employer and employe. The question, therefore, of lead glazes against leadless glazes for china or white-ware becomes one of purely technical and practical interest involving the factors of working properties, quality of finished product, and cost.

The leadless glazes are not an exact substitute for lead glazes. Both have their peculiarities. However, it is not at all unlikely that the production of American porcelain in the near future will lead toward the production of leadless glazes in a natural way, as with a higher biscuiting fire, that is, the fire used in the first baking of the ware before any glaze is applied, it is not at all improbable that the glost or glaze firing, a second or later baking to harden the glaze, may be raised also. In the production of such articles as chemical porcelain, however, the common American practice must be reversed. Instead of a high biscuit and low glost fire, a low biscuit and high glost heat must be used.

It was found that the best leadless glaze worked out in the Bureau's laboratory could be applied upon the biscuited ware as well as the usual lead glaze, but in firing the temperature range of the leadless glaze was found to be narrower than that of the lead glaze. However, the range is sufficiently wide to take care of variations met with in very uniform firing—a condition, though, which is the exception rather than the rule.



One of the First State-Aid Roads Built in Illinois. This Road, which is Constructed of Brick, is in Stephenson County, and was Among the First to be Built Under the New State-Aid Law for Road Building in the Sucker State. The First Contract to be Let Under This Law was for a Brick Road in Ogle County, which, However, Is Not As Yet Completed. The First Brick Road to be Completed and Accepted Under This Law was Built at Paris, Illinois, in Champaign County.



SAMUEL WEIDMAN
Vice-Pres. Wisconsin Clay Mfrs. Assn.

Progress Is Keynote of Wisconsin Convention

Better Manufacturing and Selling Methods Are Given Boost at State Gathering



A. W. HILKER
President Wisconsin Clay Mfrs. Assn.

A VITAL INTEREST in the welfare of the industry, accompanied by determined action to promote its advancement both in the manufacturing and selling departments, were the dominant notes of the fifteenth annual meeting of the Wisconsin Clay Manufacturers' Association, held at the St. Charles Hotel, Milwaukee, Wis., February 4 and 5.

The program was carried out as announced and was enjoyed by all present of which there were between thirty and forty, including members and visitors. Another encouraging feature was that all subjects on the program were freely discussed after each paper, resulting in much good to all.

After the routine business had been disposed of, President John Ringle addressed the convention. His talk was very interesting, but perhaps the most important point he brought out was that inadequate equipment and instruction in clayworking at the University of Wisconsin, was greatly hindering the progress of the industry in the state.

A resolution was passed by the association urging the university regents to provide for the completion of the equipment of the laboratory for research work in clays and for instruction in ceramics.

The afternoon of Thursday, February 4, was given over to the reading of three papers, the first being "The Need of Drain Tile in Wisconsin," by Prof. E. R. Jones of Madison, Wis. This was followed by one on "How a Cost Accounting System Will Help the Brick Manufacturer," by Prof. D. W. Morton, also of Madison.

A resolution was passed later in the meeting which called for the appointment of a cost accounting committee, whose duty it shall be to investigate carefully the many different systems now in use in the clayworking industry and to make a report on same at the next annual convention.

The Thursday afternoon session was closed by a paper on "My Experience With Brick Kilns and the Kind of Fuel," by J. D. Pratt, of Menomonie.

A successful innovation made in the program of the convention was the round table discussion on the evening of February 4. An informal discussion of various matters relating to the industry in Wisconsin was carried out so successfully that all present were unanimous in a request that this feature of the program be repeated at the next convention.

The session on the morning of Friday, February 5, was opened by a paper on "The New Building Code and the Clay Manufacturer," by J. G. Hamilton of Grand Rapids. During the convention, a committee was appointed to confer with a similar committee from the Bricklayers' and Masons' Union for the purpose of formulating some changes desired in the new state building code. The members of this committee are A. W. Hilker, O. Zimbal and S. Weidman.

This paper was followed by one on "Build With Brick" by J. E. Randall of Indianapolis, after which E. W. Wilson, of Mason City, Ia., read a paper on "The Present Outlook for the Brick and Tile Industries." The afternoon session on Friday was taken up by the reports of the special committees, the finishing of unfinished business and the election of officers.

The following officers were elected for the ensuing year: President, A. W. Hilker, Racine; vice-president, Samuel Weidman, Madison; treasurer, S. Gunther, Port Washington.

A subject which called forth considerable favorable comment at the convention was the "Build with Brick" button, selected by the secretary and distributed among the members of the association. This button, while simple in design, was very effective in creating enthusiasm for a more strenuous campaign to get the prospective builder to "Build with Brick." The button consisted of a map of the state of Wisconsin in red on a white background with the words "Build with Brick" imprinted in black across the map. Those present at the convention were so well pleased with the button that a resolution was adopted to make it the official button of the association.

Wants Instruments to Test Clay

One of our readers has asked us to supply him with the name and address of concerns that make the apparatus required to test clay. He has been reading "How to Analyze Clay" and refers particularly to the kind of instruments which are suggested. Can any of our readers assist us by letting us know where instruments of this kind can be found?

Questions and Answers

Here Are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants to Increase Dryer Capacity.

604. *North Carolina—Our material is a disintegrated shale which carries sufficient moisture to mold into brick without adding pugging water. Our machinery equipment consists of an ordinary disintegrator, a pugmill, and an auger brick machine with end cutter. We have no trouble whatever in getting our material through the machines and molded into brick. It is after this part of the process of manufacture that our troubles begin. We have a six tunnel metallic radiation dryer, each tunnel being one hundred feet long and holding fourteen cars or about seven thousand brick. A vent in the receiving end of each tunnel opens into a stack fifty feet high. This dryer was guaranteed to give us 27,000 dry brick in twenty-four hours but in our brief experience with it, we have been able to dry only about one-half this number and then only by the use of considerable more coal at the dryer than we used at our burning kilns. If we rush the firing, the brick in the receiving end go into mud, on account of the excessive moisture. Making the vent into the stack larger has not prevented this. We find our dried brick are badly cracked and shelly. We think, however, that this is due to the fact that part of the material, as it enters the brick machine, is exceedingly fine and moist while the other part is much more coarse and much freer from moisture. It seems that the coarse material goes in the center while the finer, with its excessive moisture, forms a thin coating on the brick. This cracks wherever there is a particle of shale near the surface. Brick made of material which has been ground to a uniform fineness do not crack in this way. What can we do to increase the capacity of our dryer? What kind of a machine should we use for grinding our material? Our brick have excessive shrinkage. Is there some way of overcoming this? Would the addition of sand help, and what would be the effect in drying and burning?*

The above question, together with an answer was published in the January 5 issue of "Brick and Clay Record." Since then we have had the following from Otto Pommer, of Quebec, Canada:

Regarding your answer to question No. 604, I take it for granted that your correspondent's dryer was built according to plans drawn up by some machinery company or a dryer concern. If this is true, he should be able to dry at least 27,000 brick every thirty-six hours, removing about ten per cent of the moisture from the ware.

I doubt very much that the ware could be dried more quickly in this particular case, since your correspondent seems to have a clay which presents some difficulties to fast drying.

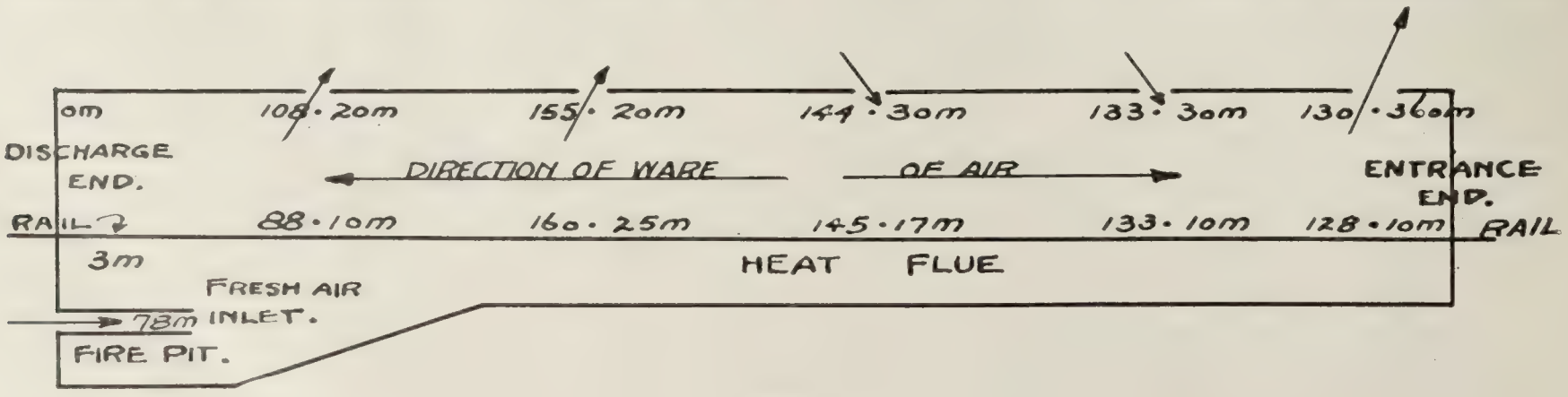
The coal consumption named is certainly excessive and shows that a great deal of heat is being wasted. This wasting of heat, or to use a better term, overheating of the dryer, is further corroborated by your correspondent's statement that the brick at the receiving end "go into mud."

Below is given the cross-section of a dryer together with some data which might be of some assistance to your correspondent in determining just how to operate his dryer to get the highest efficiency. The figures which form the basis of this table are taken from a dryer similar to that described by your correspondent. However, I do not say that they will apply to every dryer.

Your correspondent should measure the temperature in the dryer every three cars, both on top of the cars and just above the rails. This can easily be done by removing a brick from the roof and hanging the thermometer down into the dryer. The velocity of the air should also be measured at both the above mentioned points, also it should be noted whether the air is moving in or out of the holes where the thermometers are suspended. This can be done by the man in charge of the dryer.

Should the heat stay or rush too much on the top of the cars, so that the bottom brick would still be wet when the ware on top of the cars had been dry for some time, sections of cotton cloth should be hung on the roof of the dryer which would have a tendency to force the heat down through the brick. There are other devices that might be resorted to which would help your correspondent, but which it would perhaps be unwise to mention, without knowing the conditions better in this particular case.

In explanation of the accompanying illustration, the fig-



ures at the left of the period indicate the temperatures both top and bottom at that particular point. In a like manner, the figures at the right of the period give the velocity of the air currents in meters per minute.

In the roof of the dryer may be seen the places where a brick is removed when placing the thermometers. The air at the first two holes from the left of the illustration is coming out, while at the next two holes it is passing in. I do not believe that the air should be passing out of all of the holes on any dryer. Where this is the case, it can be remedied with a higher stack. I once had occasion to remedy a trouble of this kind, and did so with a forty-foot stack for six tunnels. In this dryer I was drying 20,000 brick every twenty-four hours safely and used 305 pounds of coal per thousand brick, removing 11.4 per cent of the moisture in the ware.

The trouble your correspondent is having with his brick cracking should not be the fault of the dryer if it is heated correctly. Of course, he will have to put into the dryer ware in which the clay has been properly mixed and tempered. According to your correspondent's statement he has two kinds of material, one fine and moist and the other course and freer from moisture. Also he states that the courser material can be readily traced in the finished ware.

Right there is where his trouble lies and to overcome it, he should install a wet pan to bring the material to a more uniform mixture and texture. Make a few brick with well-tempered, well-mixed and well-screened clay, and see how they behave in the dryer.

Sand and ground brick will reduce the shrinkage in your correspondent's ware, the proportion to be used depending upon the plasticity of the clay. It would seem to me that the adding of these materials to the clay would help in the drying and burning, although they might reduce the brightness of the color on the finished ware.

Wants to Mix Shale with Surface Clay

644. *Iowa—We have a stratum of shale under thirty to forty feet of lime rock and would like to know whether it would be practical to mine it and mix it with our surface clay. We have tested this shale in various ways and find that it will add to the quality of our ware and will aid in the drying without cracking.*

The fact that your shale is overlaid by a stratum of limestone would be a big point in favor of mining it. An expensive factor in mining operations is the cost of timbering the roof in order to make the mine a safe place in which to work, and also to conform to the laws governing mine working. The limestone roof, in many cases, does away entirely with timbering, thus decreasing the cost of operating the mine.

Mining is certainly more expensive than gathering surface clay, and this point must be considered in deciding to use your shale. You must determine whether or not the addition of the shale to your surface clay will increase the value and sale of the finished product. If you can get a better price for your ware by the addition of the shale and be able to sell more of it at a margin that will pay for the added cost of mining and still leave you a little profit, we should say that it would be a good proposition for you to use your shale.

Your first step, it seems to us, is to determine the cost of opening a new mine and the tonnage cost of mining in your particular case. This could best be solved by submitting your problem to a reliable mining engineer, who could tell you how much it is going to cost you per ton to mine your shale.

Wants Information on Tile Manufacture.

642. *Georgia—Can you advise me as to how tiles are made and glazed? Also will you give me the address of Charles Stegmayer, who discovered the new process of glazing which was mentioned on page 726 of your Oct. 6th issue?*

We do not quite understand how much or how far you want us to go into the question of tile manufacture in answering your inquiry.

Several books are published on this subject and it would be impossible to even skim the surface in any letter that we could write you. In point of fact, you would probably find nearly anything that you required by going to the public library and asking for books on the subject of tiles.

If this did not suit your purpose, we would suggest your purchasing "The Practical Brick & Tile Book" or "The Manufacture of Glazed Brick," which includes some chapters on tile, both books being listed in "Brick and Clay Record's" book department.

We regret, extremely, that we cannot give you the address of Mr. Chas. Stegmayer who discovered "the new process of glazing" spoken of on page 726 in our Oct. 6th issue.

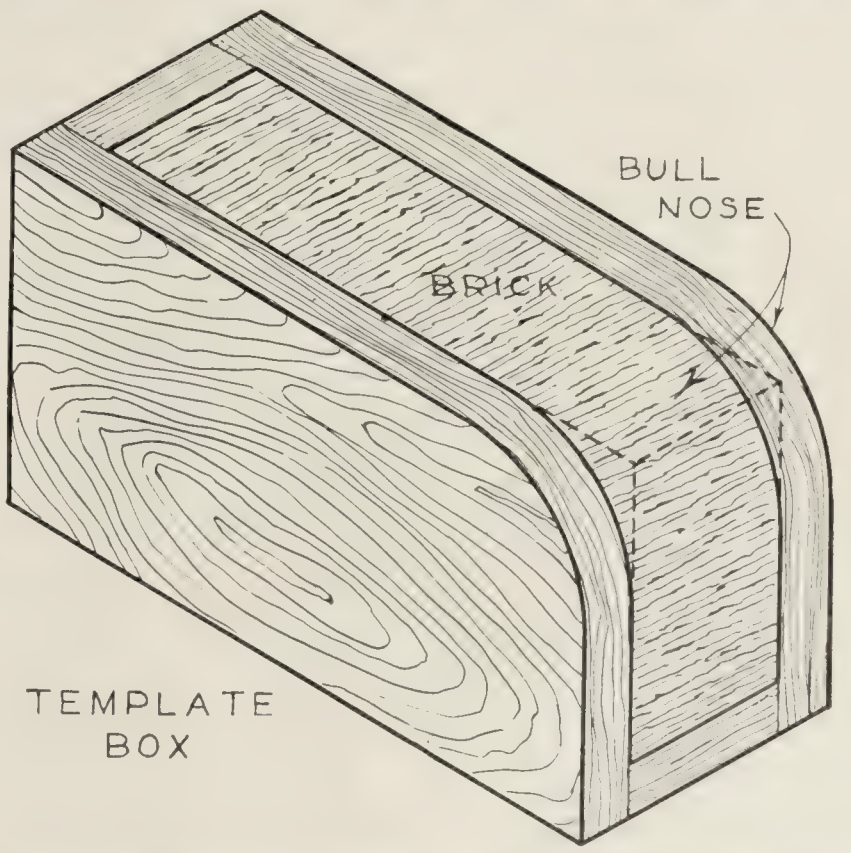
Perhaps the Clifton Porcelain Tile Company of Newark N. J., which is employing his process, could give you the information you want.

In this connection, however, we would suggest your reading the letter written by Professor E. T. Montgomery of Alfred, N. Y., which was published on page 1016 of the Nov. 17, 1914 issue.

To Make Bullnoses by Hand.

635. *North Carolina—Please give us a suggestion as to the best method for cutting the corner of bullnose brick. Ours is an end cut machine.*

Bullnoses can be cut by hand in bullnose template boxes, which are made like sketch herewith. The standard size green brick is placed in this box, which is arranged so that



the sides will fit the beds of the brick very snugly. A cutting wire strung on a bow, or a sharp knife is used to trim the former to the same radius as the sides of the box and the brick is removed and smoothed up with the aid of a scalpel knife and a pan of water. One man can turn out about five hundred of these brick in a day, the number depending upon his ability and the character of the clay he is working, as well as the exactness of the finish required.

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Capacities of Fans or Blowers for Hot Blast Heating (Kent).

Size of Blower-Housing.	Diam. of Fan-Wheel.	Revolutions per Minute.	H. P. Required to Drive Fan.	Cu. Ft. of Air Delivered per Minute by Fan through Heater.	Cu. Ft. of Air per Hour.	Heat Units Required per Hour to Raise Air from 0° to 120°	Velocity of Air through Coils in Ft. per Minute.	Free Area between Pipes in Sq. Ft.	Heat Units Given off per Sq. Ft. Surface per Hour.	Sq. Ft. Heating Surface Required.	Lineal Feet of One-Inch Pipe Required.	Pounds of Steam Condensed per Hour to 212°	Size Steam-Main Required.	Size Return-Main Required.	Boiler Capacity Required, H.P.; 30 lbs. Steam per H.P.=1 H.P.	Sq. Ft. Heating Surface in Boiler at 15 Sq. Ft. per H. P.	Sq. Ft. Grate-Surface at 35 Sq. Ft. Heating Surface to Sq. Ft. Grate.	Volume Air Will Expand to by Heating from 0° to 120° Capacity per Minute.	Area of Conduit in Sq. Ft. for 900 Ft. Velocity per Minute.	Net Volume Delivered, Allowance Being Made for Friction Equal to 100 Ft. of Conduit.
70	42	360	2½	6,900	415,200	1,021,000	900	7.7	1760	580	1,740	1055	3½	2	35	525	15	8,700	9.67	8,200
80	48	320	3	8,500	510,000	1,255,000	900	9.45	1760	714	2,142	1295	4	2	43	645	18	10,700	13.05	10,000
90	54	280	4	10,500	630,000	1,550,000	900	11.66	1760	880	2,640	1600	4½	2½	53	795	23	13,200	14.72	12,500
100	60	250	5	12,500	750,000	1,845,000	900	13.9	1760	1050	3,150	1900	5	2½	63	945	27	15,800	17.55	15,000
110	66	230	6	15,800	948,000	2,335,000	900	17.55	1760	1325	3,975	2410	5½	3	80	1200	34	19,900	22.20	18,900
120	72	210	8	19,800	1,118,000	2,900,000	900	22.	1760	1650	4,950	2990	6	3	100	1500	43	25,000	27.80	23,800
140	84	180	10	26,200	1,572,000	3,870,000	900	29.1	1760	2200	6,600	3990	7	3½	133	1995	57	33,100	36.80	31,400
160	96	160	12	33,000	1,980,000	4,870,000	900	36.7	1760	2770	8,310	5025	8	4	167	2505	72	41,700	46.30	39,600
180	108	140	15	41,600	2,496,000	6,130,000	900	46.3	1760	3490	10,470	6325	9	4½	211	3165	90	52,500	58.40	50,000
200	120	125	18	50,000	3,000,000	7,375,000	900	55.5	1760	4140	12,420	7560	10	5	252	3780	108	63,200	70.25	60,000

In figuring the above table, the temperature of the fresh air has been placed at 0 degrees; the temperature of air from the coils at 120 degrees and the temperature of the steam at 227 degrees. The pressure of the steam is five pounds.

RELATIVE EFFICIENCY OF FANS AND HEATED CHIMNEYS FOR VENTILATION.

W. P. Trowbridge (Trans. A. S. M. E., vii., 531) gives a theoretical solution of the relative amounts of heat expended to remove a given volume of impure air by a fan and by a chimney. Assuming the total efficiency of a fan to be only 1/25, which is made up of an efficiency of 1/10 for the engine, 5/10 for the fan itself, and 8/10 for efficiency as regards friction, the fan requires an expenditure of heat to drive it of only 1/38 of the amount that would be required to produce the same ventilation by a chimney 100 ft. high. For a chimney 500 ft. high the fan is 7.6 times more efficient.

The following figures are given by Atkinson (Coll. Engr., 1889), showing the minimum depth at which a furnace would be equal to a ventilating-machine, assuming that the sources of loss are the same in each case; that is, that the loss of fuel in a furnace from the cooling in the upcast is equivalent to the power expended in overcoming the friction in the machine, and also assuming that the ventilating-machine utilizes 60 per cent of the engine-power. The coal consumption of the engine per 1 H.P. is taken at 8 pounds per hour.

Average temperature in upcast	100 degrees F.	150 degrees F.	200 degrees F.
Minimum depth for equal economy	960 yards.	1040 yards.	1130 yards.

Directions for Firing Soft Coal

As an aid to firemen employed in manufacturing establishments, the United States Bureau of Mines, Washington, D. C., has just issued a bulletin under the title "Hand Firing Soft Coal Under Power Plant Boilers."

The paper contains descriptions of methods of firing soft coal under power-plant boilers and of methods of handling fire so as to have the least smoke and to get the most heat from the fuel. Distinguishing it from most technical papers, the language used is plain and simple, and technical terms have been avoided as far as possible, so that the man without a technical education should have no difficulty in understanding the methods of firing set forth in this bulletin. The following statements of interest from this publication are given below:

"When burning bituminous coal under power-plant boilers the best results are obtained if the fires are kept level and rather thin. The best thickness of the fires is

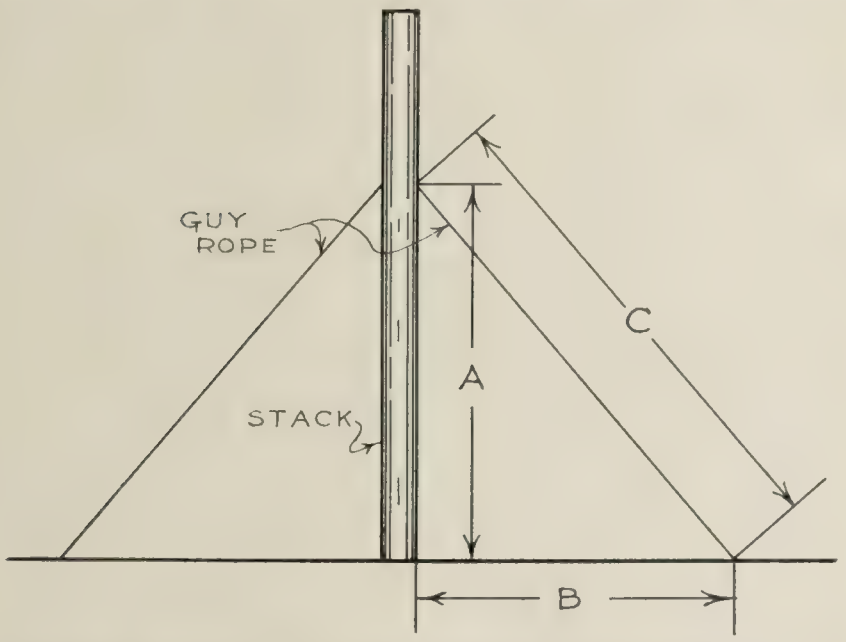
four to ten inches, depending on the character of the coal and the strength of draft. The coal should be fired in small quantities and at short intervals. The fuel bed should be kept level and in good condition by spreading the fresh coal only over the thin places where the coal tends to burn away and leave the grate bare.

"Leveling or disturbing the fuel bed in any way should be avoided as much as possible; it means more work for the fireman and is apt to cause the formation of troublesome clinker. Furthermore, while the fireman is leveling the fires a large excess of air enters the furnace, and this excess of air impairs efficiency.

"The ash-pit door should be kept open. A large accumulation of refuse in the ash pit should be avoided, as it may cause an uneven distribution of air under the grate. Whenever a coal shows a tendency to clinker, water should be kept in the ash pit. All regulation of draft should be done with the damper and not with the ash-pit doors.

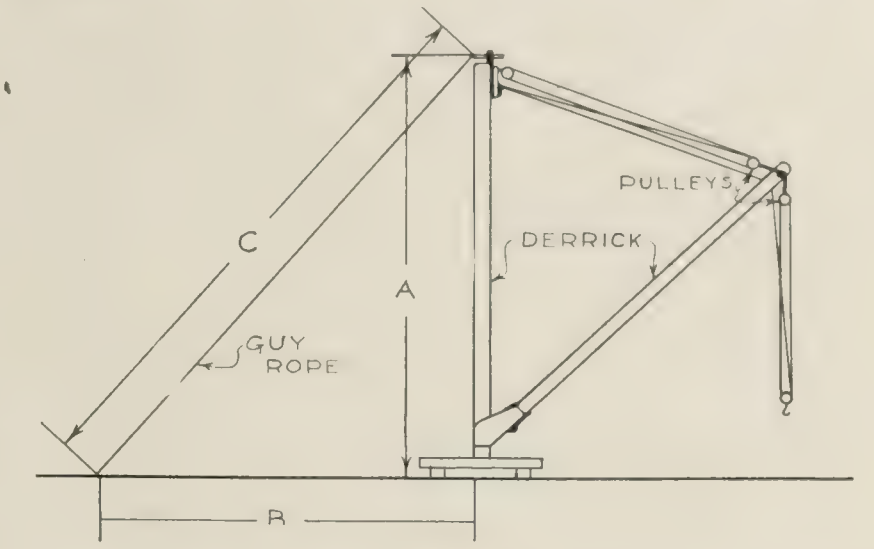
"In firing, the fireman should place the coal on the thin spots of the fuel bed. Thin and thick spots will occur even with the most careful firing, because the coal never burns at a uniform rate over the entire grate area. In places where the air flows freely through the fuel bed the coal burns faster than in places where the flow of air is less. The cause of this variation in the flow of air through the different parts of the fuel bed may be differences in the size of the coal, accumulations of clinker, or the fusing of the coal to a hard crust. Where the coal burns rapidly, the thin places form.

"Before throwing the fresh coal into the furnace the fireman should take a quick look at the fuel bed and note the thin spots. In a well-kept fire these spots can be usually recognized by the bright, hot flame. The thick places have either a sluggish smoky flame or none at all. In order to place the coal over the thin places the fireman



should take a rather small quantity of coal on his scoop, for it is much easier to place the coal where it is needed with small shovelfuls than with large ones.

"The coal should be placed on the thin places in rather thin layers. If the fireman attempts to fill up the deep hollows in the fuel bed at one firing, the freshly fired coal may fuse into a hard crust, thus choking the flow of air, causing the fuel to burn slowly and starting new high places. If the high places in the fuel bed are missed on one or two firings the hard crust at the surface will gradually burn through or crack, thus allowing more air to flow through, and the place will get back to its normal condition. Of course, if the high place in the fuel bed is caused by clinker the flow of air will not be free until the clinker is removed with the fire tool. Whatever may be the cause of the high places in the fuel bed, the fireman should remember that they are places where the coal does not burn. There is no use in placing coal on such a place."



Copies of this publication may be obtained by addressing the Director of the Bureau of Mines, Washington, D. C., and asking for Technical Paper No. 80.

To Find the Length of Guy Ropes.

In order to find the length of guy ropes necessary for smokestacks, derricks, etc., the following method will be found helpful:

Let "A" in the illustrations shown on this page represent the vertical distance between the fastening of the guy rope on the stack or mast and the ground level; "B" the horizontal distance in feet between the point of anchorage and the base of the stack or mast; and "C" the distance between the point of attachment on the stack or mast and the point of anchorage.

In order to find "C," or the length of guy rope required, multiply the distance "A" by the distance "A." Then multiply the distance "B" by the distance "B." Add the products of the above operation together and extract the square root of their sum, and the result will be the desired length. To this must be added the additional length of cable necessary for anchoring, or for fastening, dependent upon the method adopted.

The above is true only if the ground is approximately level between the foot of the stack and the point of anchorage.

The Way to Splice a Belt.

When splicing a belt that is over twelve inches wide, a step splice is recommended, since it makes what is practically an endless belt. Step the ends of the belt, allowing three to four inches for each ply, care being taken not to cut into the ply below the one to be removed. A good quality of rubber cement should be applied to the prepared surfaces. Three coats should be used, each coat being allowed to dry before the next coat is applied. The ends of the belt may then be brought together, closely fitted and firmly pressed together. Sew through with a light lace leather, using a small belt punch for the perforations and being sure to make the holes small enough to offer resistance to the lace leather.

Buy It Now!

No use of waiting for a break down to tell you how worn out and ancient some of your machinery is.

Old Machines Earn Less Than New Ones

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Hollow Tile Men Criticize Insurance Articles.

B. C. Keeler, secretary of the Mason City (Iowa) Brick and Tile Company, takes issue with "Brick and Clay Record" in connection with the article which appeared in the January 19 issue, on the subject of the application of penalties in the way of increased insurance rates, on construction other than brick. His letter is dated January 23 and reads:

In reading the article "Saving Dollars by Using Brick," by Gardner Read and E. Winfield Day, the writer was very much astonished to run into the paragraphs with reference to hollow tile that are printed in the last columns on page 157 and the bottom of the first column on page 158 of the last issue of "Brick and Clay Record."

While I have appreciated the fact that hollow tile has not had the consideration by the Underwriters and insurance men that it merits, it is rather astonishing to know that Gardner Read, endorsed by "Brick and Clay Record" as an expert, has any basis in fact for the two statements referred to.

While I do not question that many insurance men have similar impressions I would like very much to know if there is any basis in fact for them and will appreciate it very much if Mr. Read will communicate with Chas. T. Harris, secretary of the Hollow Building Tile Manufacturers' Association of America, Room 824 Engineers' Building, Cleveland, Ohio, giving him the desired information.

In Answer to the Above

"Brick and Clay Record" asked Mr. Read to write Mr. Harris, giving a full and fair discussion of the matter, and citing, wherever possible, the authorities for the statements which had been published as a part of the article that appeared in the January 19 issue. This was done, and a copy of Mr. Read's letter to Mr. Harris follows:

February 2, 1915.

Charles T. Harris, Secretary,
Hollow Building Tile Mfrs.' Assn.,
824 Engineers' Bldg., Cleveland, O.

Dear Sir:

The editor of "Brick and Clay Record" has called my attention to a letter which he received from B. C. Keeler, of the Mason City (Iowa) Brick and Tile Company, and has asked me to accede to Mr. Keeler's request that I write you, as secretary of the new national association of hollow building tile manufacturers, regarding the article that appeared under my signature in the January 19 issue of "Brick and Clay Record."

May I first ask to be properly understood by the readers of the insurance discussions that Mr. Day is assisting me to present, as to the object of those discussions and the results we are striving to attain?

When I consented to prepare some statements about insurance, which I believed would help those who read the articles to a better understanding of the analytic system that is used to determine rates, the editor of "Brick and Clay Record," as well as Mr. Day and myself, saw an opportunity of benefiting a large number of the readers of that magazine. None of us believed that the presentation of any undeniable fact would injure any particular interest.

Neither Mr. Day nor myself represent any insurance company nor any group of companies. We try, and do, represent the owners of properties, contractors and architects.

The most valuable friends one can have are not those who tell us only the complimentary, the while they talk of our weaknesses and short-comings behind our backs. Real friends tactfully refer to possible improvements which they are in a position to assist us in securing.

As a doctor studies the symptoms of disease and the remedial effects of certain combinations of medicine, or diet, or climate—as a lawyer studies the decisions that define laws, in order that, by citing these decisions, he may remedy the conditions in which his clients find themselves, so we, who have made a study of records, statements, causes and effects, gains and losses, mistakes and improvements, discoveries and tests relating to fires (all of which history records for our mutual benefit) use the knowledge gained from this study for the benefit of our clients, who are owners of property, or those who plan and construct buildings.

A physician's advice might include the omission of smoking. It is easy to understand how a tobacconist would resent this advice, if it were given to a large number of his customers. The lawyer's advice against the infringement of the Sherman law is resented by a large number of manufacturers who do not understand why they cannot heal an industrial illness by the simple expedient of agreeing on a moderate and, perhaps, gradual price improvement.

The question of hollow tile and its relation to brick as a fire cut-off is a matter that has engaged the attention of fire underwriters for some time. Much has been said on the subject and tests of various kinds of brick and tile are being conducted continually.

The charges made for tile—which are, in reality, penalties exacted for its use instead of brick—are the results of the combined studies of individuals and companies who have spared neither time nor expense in the attempt to solve the question "How can a fire be confined." They are based, as has been explained in the article to which I have alluded, on the first roughly estimated rates made by the insurance companies, to the later schedules, which give, in detail, the construction of the so-called "standard building."

These schedules make charges—which are penalties, in the way of increased premiums—for all "deficiencies" from this standard, and it has been the sole aim of the fire underwriters to so arrive at a means of determining rates on individual buildings and groups of buildings, that will adequately cover the hazards of fire, as well as to make a due allowance—or reward, in the shape of a reduced premium—on buildings that are so constructed that only a portion of that building is likely to be involved in a fire.

All of the schedules used in Illinois charge, in a greater or lesser degree, for tile walls, the charges varying with the construction of the building, its "exposures"—which are the points at which there is likelihood of its being set on fire by fires in adjoining buildings and similar risks—and other minor points that are not necessary to enumerate here.

Tile is accepted as "standard" in fireproof and sprinkled buildings, for stair and elevator-enclosures, partitions, roof-houses, etc. (except in special instances, where charge is discretionary with underwriters.)

Tile stair and elevator-enclosures also receive a credit—in the shape of a reduced premium—under the Dean schedule, although the credit is not so large as that given for the same construction in brick.

Reverting to my previous statement of the analysis that

has been applied to the results of fire in various types of buildings and the results of these fires on all sorts of building materials, it must follow that the charge—or increased premium—for tile, is proof that those who study fires, and the results of fire, do not consider tile as effective, as a cut-off, as brick has proven in every-day practice.

If tile is better than is shown in the records that insurance men must use, the course of the hollow tile manufacturer is clear. Instead of accepting the conditions as they are today, why not prove, at the Chicago Underwriters' Laboratory, or at one or more similar institutions, its equality with or superiority to brick, which has been adopted as the "standard"?

Mr. Keeler has asked that I explain the basis upon which my statements, as made in the article "Saving Dollars by Using Brick" were built. Please note the following, quoted verbatim from the manufacturing schedule for rating single occupancy—manufacturing risks not otherwise provided for:

"For substantial interior brick walls, rising from ground to roof, but having unprotected openings, deduct from such wall one-tenth area charge, but not exceeding four-tenths in all."

I find no such credit for tile.

"When the weight is borne upon heavy brick pilasters, or upon iron columns properly protected, the charge for light walls may be modified, or waived at discretion. For walls furred or finished with combustible materials, add for each story so furred or finished, two cents."

I find no such provision for reducing or waiving, in the case of tile walls.

"For elevators enclosed in other than brick towers as prescribed, add as follows, to wit: If enclosed in solid plaster or tile with approved doors, for first, add one cent for each floor pierced; for each additional (floor) add one-half cent."

"Stairways, deficiency charge same as elevators."

(From the fireproof schedule No. 3 walls)—"In skeleton construction, if walls are not brick or are less than 12 inches thick, add one cent for each story deficient."

I could quote on, indefinitely, but I want to ask you, right now, to pardon the length of my letter. In it I have tried to bring out enough to prove the points that Mr. Keeler seemed to question. It may be that I can be of some assistance to him and to other manufacturers of hollow clay building tile, in securing a more favorable recognition of their excellent product.

They must, however, take the initial step. They must remember that privately conducted experiments, while interesting, will not have any effect upon the fire underwriters. Nor will claims, nor influence, nor politics.

Theoretical tests, even if made by fire underwriters, and in their laboratories, will only serve to mitigate, in a measure, the results secured by a long series of observations, made at the scenes of fires, under actual fire conditions. Fire underwriters' tests, if satisfactory, and particularly if conducted on types of tile that claim superiority to those that have been under observation in the past, will help considerably.

In closing, let me leave one thought with you—is it not a fact, and a fact that we are very apt to overlook—in talking about walls in manufacturing and other mercantile buildings, we have in mind walls of 16 inch to 24 inch thickness, when these walls are to carry any very considerable weight?

And is it not also a fact that hollow building tile manufactures lay stress on the 8 inch and 12 inch wall, thus leaving, in great measure, the heavier kind of construction to brick?

If this is so—what is the reason?

Very truly yours,

Gardner Read.

Secretary Harris Replies

Under date of February 3, Mr. Harris replied to Mr. Read, and the position taken by him merits the approbation of everyone interested in the betterment of present conditions. His letter reads:

Mr. Gardner Read,
1229 Insurance Exchange Bldg.,
Chicago, Ill.

Dear sir—

Please accept my thanks for your esteemed favor of the 2nd, and the very full, frank and fair statements therein contained. Your letter and article are both based on facts as they exist and if those facts are not palatable to our association and not in accord with the truth then it is the duty and the first duty of this association to change those facts as they exist to the standard of truth, and if we cannot do that we must accept the proven truth upon which to conduct our business.

When I received Mr. Keeler's letter of January 23rd on the 25th ult. I wrote him as per copy enclosed. When you have read this copy will you kindly return it to the above address? This whole question will be taken up at the next meeting of the Executive Committee on the 9th, and I am glad to have your letter for that date to reinforce the position taken in my letter of January 25th. In the meantime I beg to assure you of my cordial co-operation in your work, and I trust that I may have yours in mine, which is no small undertaking in the present chaotic condition of the hollow tile business.

Sincerely yours,

Charles T. Harris.

The letter to which Mr. Harris alludes, and which he enclosed, was one written by him to the members of the executive committee of the Hollow Building Tile Manufacturers' Association. While nothing contained in it precludes publication, we refrain from printing it, feeling that it was intended solely for the eyes of those to whom it was addressed. "Brick and Clay Record" has received numerous other letters in connection with the article mentioned, one of which stated that "It can hardly be denied that the article in question, though perhaps contributed by insurance men, was influenced by the common brick publicity bureau." This last is interesting, for while "Brick and Clay Record" has and will advocate a publicity bureau for common brick—something that common brick needs badly—it had no idea that one really existed. It only goes to show how little we know of what is going on all around us.

Mr. Read's answer, even while sent to Mr. Harris, answers all of the letters we have received. The article was published to wake the hollow tile men up, for one thing—and it has certainly done that. Another point was to make men build better and safer buildings. Let us hope it will attain that purpose also.

Pleased with Posterettes.

We are glad to publish the letter which follows, written by P. O. Duclos of Bozeman, Mont., under date of the 19th:

Enclosed please find $1.80 in payment of bill for posterettes and electro. I am well pleased with both and believe that their use will be a great help in drawing public attention to burned clay.

Your answers to my questions published in your Q. & A. department are very much appreciated.

We have received a number of similar letters in connection with these posterettes and believe that as soon as our friends begin to realize the advertising value of this little reminder of the "Build with Brick" slogan, we will be swamped with orders. The price which we have quoted—$1.50 per M—is very low, as you will find if you will consult men who make a specialty of posterettes or, as they are sometimes called, poster stamps.

The Illness of Mr. Sheasgreen

Makes it impossible to continue his articles on Cost Finding, at least for the present. It is hoped to resume them in an early issue.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

A COMPLAINT has recently been filed with the Interstate Commerce Commissioners by the Boston Brick Company, Inc., of Boston, Mass., against the Boston and Maine Railroad Company; the Baltimore and Ohio Railroad Company, and eight other carriers.

It is stated in the complaint that the rate on common brick from Gonic, N. H., and Bradford, Pa., to various points in New York, New Jersey, Pennsylvania, Delaware and other states is unjust and unreasonable. Attached to the complaint are certain schedules showing the present rates to and from said points. The brick company asks that a hearing be set, that an investigation be made into the matter and that reparation be awarded for the overcharges made on the shipments. They further ask that the Commission order a reduction in the brick rates to and from the named points.

The Hydraulic-Press Brick Company, of Zanesville, Ohio, have also entered a complaint against the Pennsylvania Railroad Company; the Baltimore and Ohio; the Chesapeake and Ohio and the Norfolk and Western Railroad companies.

The brick company states that it has a factory at Roseville, Ohio, which is in close proximity to Zanesville, Ohio, from which place the rate on brick to Huntington, W. Va., is $1.15 per net ton, with a minimum of 50,000 lbs. The rate from Roseville is somewhat higher. It asks for a hearing in the matter, that reparation amounting to $114.63 be allowed on certain shipments made, and that new rates be put into effect.

The following reparations of interest to the industry have been allowed by the Commissioners since our last issue:

United States Brick Company vs. the Southern Railway Company. A refund of $264.92 was allowed on account of an unreasonable rate applied on twenty carloads of brick, forwarded from Tell City, Ind., to Louisville, Ky., during the period from August 6th to November 11, 1912, inclusive.

Coffeyville Vitrified Brick and Tile Company vs. the Gulf, Colorado and Santa Fe Railway Company et al. A refund of $480.50 was allowed on account of the unreasonable rate applied on nineteen carloads of paving blocks from Boynton, Okla., to Port Bolivar, Texas, during the period from August to September 17, 1912.

The Coffeyville Shale Products Company vs. the Atchison, Topeka and Santa Fe Railway Company. A refund of $33.98 was allowed on account of an unreasonable rate applied on two carloads of building tile, forwarded on March 24 and April 25, 1914, from Coffeyville, Kans., to Bucklin, Mo.

National Fireproofing Company vs. the Raritan River Railroad Company et al. A refund of $14.19 was allowed on one carload of hollow building tile forwarded on March 26, 1914, from Amclay, N. J., to Nottingham, Pa.

Brown, Hull and Company vs. the Nashville, Chattanooga and St. Louis Railway Company. A refund of $51.70 was allowed because of the unreasonable rate applied on two carloads of common brick forwarded from Chattanooga, Tenn., to Jackson, Tenn., via an interstate route on October 22 and November 13, 1913.

National Fireproofing Company vs. the Hocking Valley Railway Company et al. A refund of $8.75 was applied on one carload of hollow building tile forwarded from Nelsonville, Ohio, to Steuben, Wis., on August 9, 1913.

J. A. Hoole vs. the West Shore Railroad Company. A refund of $50.16 was allowed because of an unreasonable rate applied on one carload of brick forwarded from Newburg, N. Y., to Carbondale, Pa., on June 18, 1914.

National Fireproofing Company vs. the Hocking Valley Railway Company et al. A refund of $60.35 was allowed on account of an unreasonable rate applied on eleven carloads of hollow building tile forwarded from Haydenville, Ohio, to Rogers City, Mich., August 19 to September 9, 1913.

M. P. Washburn, agent, has been allowed to revise the description published in his tariff on fire brick. The application, No. 9825, was made on behalf of the Cincinnati, New Orleans & Texas Pacific Railway Company and other carriers participating in his I. C. C. tariff No. 139.

The Commissioners say:

"Respecting rates on fire brick from the points of origin to the points of destination shown in tariff of M. P. Washburn, I. C. C., No. 139, he is authorized to revise the description published in said tariff in connection with rates on fire brick, and now reading:

"'Brick, fire, minimum weight capacity of car,' to read,

"'Brick, fire, minimum weight 50,000 pounds,' without observing the long-and-short-haul provision of the act."

The complaint of the Fort Dodge Brick and Tile Company, No. 7594, against the Chicago, Indianapolis & Louisville Railway Company et al., has been dismissed by the Commissioners. Case No. 7520 of the National Fireproofing Company against the Hocking Valley Railway Company et al., has also been dismissed.

(*Continued on Page 378*)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

A Simple Silo Front

The fact that the farmer is going to be an exceptionally good customer this year is leading many clayworkers to take up the manufacture of drain tile, silo blocks and other forms of burned clay that can be used on the farm. Most of these manufacturers have heretofore been making only brick and perhaps a limited amount of hollow tile, so that the entrance into new fields will require new equipment and appliances.

For those who are beginning the manufacture of silo block and the sale of silos in complete form, the securing of a suitable silo front, that is, the frame work for the doors, may be a troublesome problem. There are several types of silo front on the market, but the one that combines simplicity in construction with ease in operation, is by far the best.

George W. Zook, Buffalo, Kansas, manufactures a silo front of the type above described. It is built of structural steel and can be erected without any special machinery or equipment.

One of the features of this silo front is the simple and effective catch for securing the door in place, and will be found suitable for either a clay tile or brick silo.

A Handy Wrench for the Brick Plant

The difficulty usually encountered in tightening nuts that are in unhandy places has long been a source of trouble for the foreman and head burner of the clayworking plant. The ordinary wrench slips off of the top of the nut, making it necessary in many cases to take a new hold for every twist, resulting in the loss of considerable time, and often temper. And then, there is also always present the possibility of rounding the faces of the nut.

A ratchet wrench that is heavy enough, and yet low in price, would be welcomed, and such a wrench has been patented by the Chicago Manufacturing and Distributing Company, Chicago, Ill. This wrench was designed primarily for rough, speedy work in the tightening and loosening of taps on kiln bands, and for work in the machine and boiler room, where the bolts must be kept tight, and yet are in a very difficult place to reach. One application of the wrench will tighten and one application with socket reversed, is all that is required to loosen the taps.

Has New Sales Manager

Arthur C. Vicary, formerly of Lorain, Ohio, has recently assumed the duties of salesmanager of the steam shovel department of the Ball Engine Company, of Erie, Pa. Having been engaged in the design and sale of steam shovels for years, he is widely known to steam shovel users—particularly in the eastern section of this country.

The Ball Engine Company is now placing a line of revolving shovels on the market, under the name of the "Erie" steam shovel. Judging from their reputation and standing as manufacturers of high grade steam engines, the entrance of the Ball Engine Company into the shovel field will give the clayworker similarly good equipment in the new line.

Makes Brick Paving Cheaper

One of the items of expense in the laying of brick paving, while not by any means the first in importance, nevertheless offering an opportunity for cost-reduction, is the application of the grout filler, to the pavement.

The Marsh-Capron Manufacturing Company, of Chicago, Ill., claim to have a machine that will make brick pavement cheaper and more popular than ever before. This machine has been approved by the New York Highway Commission and is the only one of its kind on the market. It is something new this year and brickmakers who attend the Detroit convention will have an opportunity to see this machine, which will be on exhibition there.

An Interesting Booklet on Locomotives

The industrial locomotive is coming more and more into general use. Around the clay plant it finds its most extensive use in hauling cars from the bank or clay mine to the elevator. In many plants it has replaced the mule and driver, and is doing their work much more quickly and efficiently at a great saving in cost.

The Atlas Car and Manufacturing Company, Cleveland, Ohoi, has just issued a bulletin (No. 1175) which includes a description of the storage battery locomotives, cranes and cars manufactured by that company. For the clayworker interested in reducing the operating expense of his clay pit or mine, this booklet will prove interesting reading.

Colonel Durbin Goes Abroad

Col. W. T. Durbin, formerly president of the Anderson Foundry and Machine Works, left New York Jan. 22nd for a trip to South America. Colonel Durbin, as is well known, was formerly governor of Indiana. W. N. Durbin, his son, is now president of the above company and W. L. Rose is secretary-treasurer.

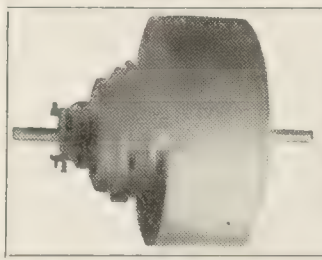
Questions and Answers

"Brick and Clay Record" advertisers have, we fear, overlooked a bet. In the January 19 and February 2 issues a new department was started for their particular benefit. It consisted of the publication of questions that reached us, through the mail, as to certain brickyard equipment.

It might be well to look back through the two issues named, and read these questions. They are on pages 175 and 264.

More of these questions will be published in the March 2 issue—and they ought to put you in the way of making sales.

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.



Dodge Line means "Everything for the Mechanical Transmission of Power." The most efficient and economical method possible. DODGE MANUFACTURING COMPANY,
Works: Mishawaka, Ind. Branches Everywhere

Our business is diagnosing and remedying
TROUBLES
of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult
H. & B. COPPING, Kankakee, Illinois
We personally do the work.

SAVING
with Frink Pyrometers starts within one week of the receipt of your order. No interruption to the progress of your work. Ask us HOW.
The Frink Pyrometer Co. Lancaster, Ohio

DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

H. M. DEAVITT, *Ceramic Chemist*
209 South LaSalle Street, Chicago
Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

Gardner Read & E. Winfield Day
INSURANCE
1229 Insurance Exchange Chicago
Specialists in the reduction of insurance rates and fire hazards.
To those who place their insurance through us our service is free. Others we charge a percentage of the Net Savings which we secure, plus the actual expenses.
Do you know why you are being charged a certain rate and what is necessary to secure a reduction? We Do!
We personally argue discretionary charges before the various rating authorities having jurisdiction in your district.



"BUILD NOW!" It is the slogan of the building material manufacturers of the country. From New York to San Francisco, from Seattle to Miami, the call is being heard. It is being taken up by contractors and architects and owners are giving heed to the admonition. It is a fitting prefix to the brick maker's propaganda, "Build with Brick."

"Build Now" and "Build with Brick" make a trade getting couplet that is bound to bring business to the clay working industry. Already the signs are apparent. Starting in Boston, taken up in New York, passed on to the Twin Cities, re-echoed in Chicago and hurled back upon the mountainous West by the responsive Pacific Coast cities, there is a turning tide in the affairs of the building world that, while only feebly apparent in spots today is nevertheless resplendent with promise.

Bradstreet's summary gives the facts. With only ninety-nine cities reporting up to February 5, the country's total building plans are shown to be only six per cent behind those reported for the same number of cities in January, 1914. December showed a shortage of twenty-five and seven-tenths per cent. New York's two largest boroughs alone showed a gain in January of $4,448,000, or seventy-six per cent over January, 1914.

From the same source, that is, Bradstreet's, the following classification is taken:

	No. of Cities	Number Permits 1915	Number Permits 1914	Values 1915	Values 1914
New England	15	489	503	$1,170,161	$2,165,535
Middle	20	2,109	1,990	13,720,425	9,870,830
Western	15	1,329	1,703	3,655,863	5,429,296
Northwestern	15	872	1,214	5,926,307	6,971,120
Southwestern	10	882	1,444	1,910,500	2,411,469
Southern	17	1,220	1,731	1,516,295	2,535,922
Far Western.....	7	589	716	752,616	1,009,946
Total U. S.....	99	7,490	9,301	$28,554,167	$30,394,118

In January last year there was no war, no stringency in money as compared with the tightness of money at the opening of 1915, and there was more general prosperity. Mills were running at fuller capacity. The United States Steel Corporation had sixty-four per cent of its capacity in operation. It opened January, 1915, with only forty-five per cent blown in. It now has fifty-five per cent employed. The same is true in other industries. Yet, despite the handicap of 1915, we find that instead of one hundred and forty-six cities reporting a grand total of $45,999,862, ninety-nine cities—a deficiency of forty-seven communities—show a total of $28,554,167, or a loss of $17,438,695. In other words, with a falling off in volume of 47.4 the decrease in estimated value was sixty-two per

cent. This leaves only 14.6 to be accounted for by belated returns.

January 1914 carried over approximately $133,000,000 in unfinished or projected building construction. January 1915 has $387,000,000 in projected operations, plans for which had been filed, but upon which work was indefinitely postponed. Considering this large volume of planned construction work, the showing that January 1915 makes against the unhampered building movement a year ago is not only encouraging, but inspiring to those who are casting about for evidences as to the direction of the 1915 trade winds. It shows how the "Build Now" movement has affected prospective builders.

There are communities that show dark spots, however, but let it be remembered that this propaganda has only started, that there are often local causes for regression and the building demand is likely to be more acute as the 1915 building season opens. Chicago developed a loss of only 9.5 per cent from January, 1914, and Cleveland 14 per cent.

Detroit showed a loss of 53.7 per cent; Philadelphia, 27 per cent; Pittsburgh, 60 per cent, and Portland, Ore., 21 per cent. Cities that gained, however, were the two boroughs of New York, 76 per cent; St. Paul, 36 per cent; Toledo, 129 per cent, while Schenectady, a large manufacturing city, developed a gain of ten times that of December, 1914, and twenty-seven times that of January a year ago. Most of this gain is due to factory extension.

What this "Build Now" movement means is shown by the action of the Building Trades Employers' Association of New York. Judge Elbert H. Gary, Chairman of the Board of the United States Steel Corporation, who was made chairman of the committee which Mayor Mitchel of that city named recently, to study the unemployed situation there, fixes the total percentage of unemployed in the country's metropolis at 17.7 per cent. Speaking as an authority on the financial aspect of the "Build Now" movement, the Judge said that "the most liberal building loan policy possible" is being sought by the committee from the big lending companies.

Immediately after the compilation of this report, the Building Trades Employers' Association called a meeting in New York and decided to follow these policies:

"To patronize local factories and shops for the purchase of materials; to distribute existing work among the largest possible number of individuals, by working in eight hour shifts or using men every other week instead of straight through the fortnight; and to give married men the preference whenever it is necessary to cut down the working force." It's a broad-gauge, big-hearted plan that ought to spread.

With an apparent improvement in building construction throughout the country, clay products manufacturers are more or less concerned with reference to the low price of brick now ruling. In New York the price already is advancing, but this, it might be noted, is usual at this time of the year when the Hudson river is closed to navigation. Prices have moved up in the last fortnight about twenty-five cents a thousand, dock.

This is one of the arguments being advanced by the "Build Now" agitators. Cost of materials is low. Materials are low in price because there has been light demand, but the trade understands pretty well that conditions are such that immediately there is an improvement in the movement of building plans, the price must necessarily move up.

This is true of structural steel, Portland cement and common brick. Steel at Pittsburgh is quoted at 1.21

Increased Efficiency *Greater Economy*

Results obtained from use of

"Fuller Quality"

Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways
Yellow Strand Wire Rope
Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.

Pyrometer Comparison



Does the Civil Engineer take his measurements with a rubber tape? Will you be satisfied to measure your heat with an instrument even more flexible?

Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories Pittsburgh, Pa.

"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel Rails and Accessories

Offices: Steubenville, Ohio

Mills: Newark, Ohio

BUCKEYE MEANS BEST — BEST MEANS BUCKEYE

All Sections from 12 lb. to 40 lb. per yard

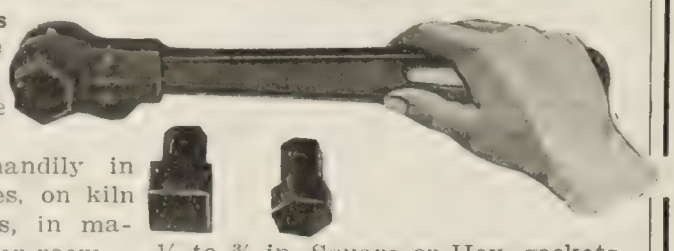
Write or wire us, when in need.

No order too large to handle promptly or too small to secure immediate attention.

The Wright Ratchet Wrench

Only one application of wrench to tighten nut, and one application with socket reversed to loosen.

Eliminates bruised nuts and fingers
Saves time and labor.



It works handily in unhandy places, on kiln and tank lugs, in machine and boiler room. ¼ to ¾ in. Square or Hex. sockets.

Chicago Manufacturing & Distributing Co.
2608 West 26th St.,
Chicago, - - - - - - - - - Illinois

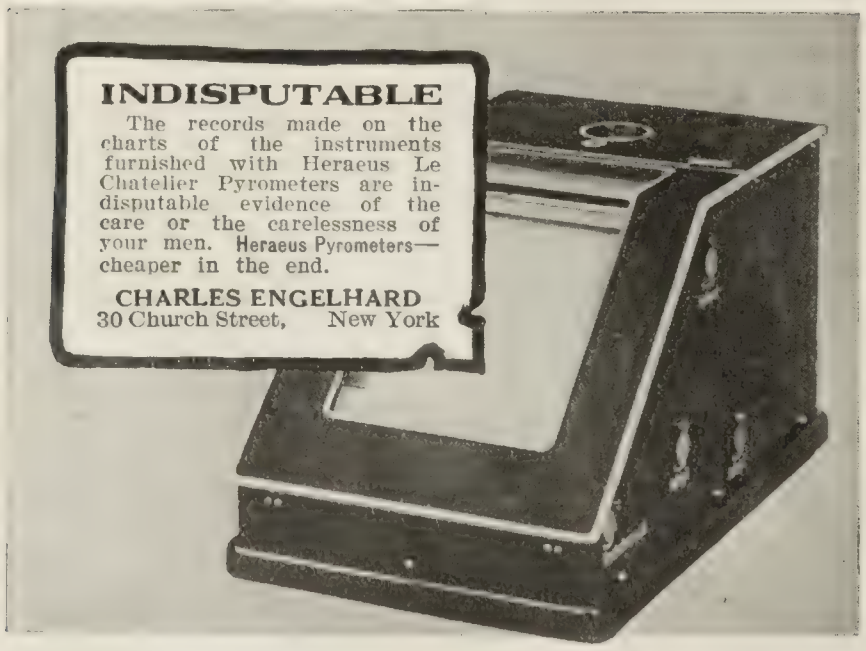


Davenport Locomotive Works,
Davenport, Iowa

J. M. CUTSHALL C. F. CUTSHALL
General Contractors

We install waste heat dryers, build clay plants complete; also construct any type of kiln.

Brazil, Indiana



cents and 1.26 cents a pound, tidewater. The normal price should be nearer $28 a ton and the trend will be toward that figure before long. Portland cement is passing through another price-cutting war in the East. The mill price has been reduced to something like seventy cents for Lehigh Valley from a ninety-cent level. There is no money in the manufacture of cement at that figure, and so reserves are being absorbed rapidly.

Common brick is not seriously overproduced in any part of the country. Prices, however, are low, mainly because the market has had to meet that of other competing and co-related material. The time is coming, however, and it is not many weeks off, when better prices will be obtained for this basic material, but let no one expect anything like boom conditions because, if they do, they will be disappointed.

Even in Schenectady, where there is a wonderful building movement in industrial lines requiring the use of brick and cement in large quantities, no one expects materials to go high. It is the salvation of the manufacturer and the dealer alike, not to try to load the traffic for all it will bear. The keynote of 1915 prosperity will be to keep prices as low as a moderate profit on the cost of production will permit because the average builder is having a hard enough time to get money and if materials are forced up, he will stay out entirely.

The best way is to get the country's brick making machinery in such shape as will permit production at the lowest possible cost and then be content with a moderate profit. Good times are on the way, but let us woo, not shoo them.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALBERTA

The Prenderville Brick and Terra Cotta Company, Ltd., Calgary, Alberta, has been incorporated with a capital stock of $500,000.

CALIFORNIA

A. P. Taylor of San Francisco, Cal., and others are figuring on establishing a brick plant near Honolulu in the Hawaiian Islands.

The City Trustees of Calistoga, Cal., have adopted a resolution to construct a complete sewer system in that town. Plans have been drawn and bids for the necessary sewer pipe and construction work will be called for within a few weeks.

The San Jose Brick Company of San Jose, Cal., has closed down its plant until the weather becomes more favorable for operation. The company now has on hand a sufficient stock for its immediate needs.

Manager Hoyt of the United Materials Company of San Francisco, Cal., dealers in brick and other materials, is now spending a good deal of time at the Panama-Pacific Exposition grounds looking after the company's lines that are going in there.

California sewer pipe makers are interested in a new

bill which has been introduced in the California State Legislature which would create a sanitary engineering department. The bill carries an appropriation of $30,000 to put the new department into operation.

O. M. Tupper, with offices in the Postal Telegraph building, San Francisco, Cal., is now representing the San Jose Brick Company of San Jose, Cal., the Holmes Lime and Cement Company and the Western Lime and Cement Company.

Manager Laumeister of the Denny-Renton Clay and Coal Company's San Francisco office, is now delivering the last of the paving brick for Third Street, San Francisco. He says the city authorities seem disposed to curtail expenses and to do as little street work as possible just now.

The City Trustees of Bakersfield, Cal., are advertising for bids on a large amount of sewer work in that city. Some ten-inch and eight-inch, and a large quantity of six-inch vitrified sewer pipe will be required.

Chris. Berg, representative of the Porta Costa Brick Works in San Francisco, reports that his company has resumed operations after being shut down on account of rainy weather. He says that business is now quiet but that there will be a lot of work this Summer.

The plans for the new passenger station of the San Pedro, Los Angeles and Salt Lake Railroad Company, to be erected at Los Angeles, Cal., this spring, call for a considerable amount of brick, fireproofing and floor tile. The building will cost about $300,000.

Building operation in San Francisco and other California cities during January, while not up to the mark of the past few years, has, nevertheless, shown a distinct advance over the months immediately preceding in spite of distinctly adverse weather conditions. In San Francisco, the total value of the permits issued amounted to $1,006,043 as compared with $717,903 for the month of December preceding. In Los Angeles there was a similar gain, the total for January being $860,360 as compared with $651,639 for the month preceding. In the smaller cities of Oakland, San Diego and Sacramento, there were proportionate gains, the general indication being that the worst of the building depression is past. In San Francisco there was also an improvement in the proportion of brick buildings started as compared with frame, brick and steel construction.

DISTRICT OF COLUMBIA

D. L. Jenkins was elected president of the Building Material Exchange of Washington, D. C., at its annual meeting held at the Commercial Club a few days ago. Other officers elected include: S. D. Frazier, vice-president; A. F. Harlan, secretary and treasurer, and W. W. Shearer, chairman arbitration committee.

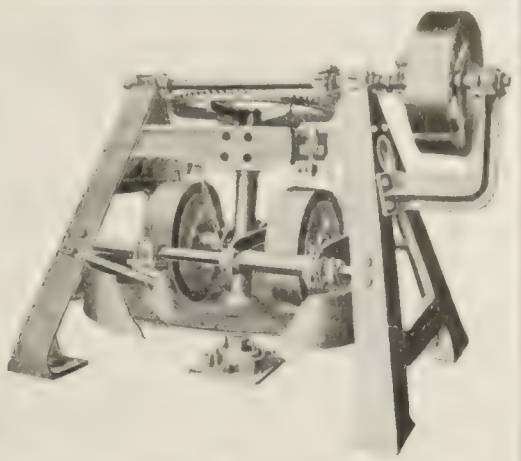
FLORIDA

Work has been started on the new system of brick roads to be built in Orange county, Florida. There will be five roads built, one of which, the Orlando-Kissimmee road, will be constructed by the Alabama Brick Paving Company. The Southern Clay Manufacturing Company, of Chattanooga, Tenn., will build three of the roads and R. M. Hudson, of Atlanta, Ga., will build the Zellwood road.

GEORGIA

The Cary Fire Clay Products Company has begun operations at its new plant in Milledgeville, Ga., turning out fire brick and other products made of fire clay. The new concern will be managed by D. T. Asbury and

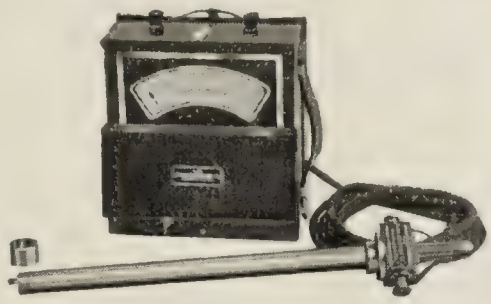
THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES, IOWA

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

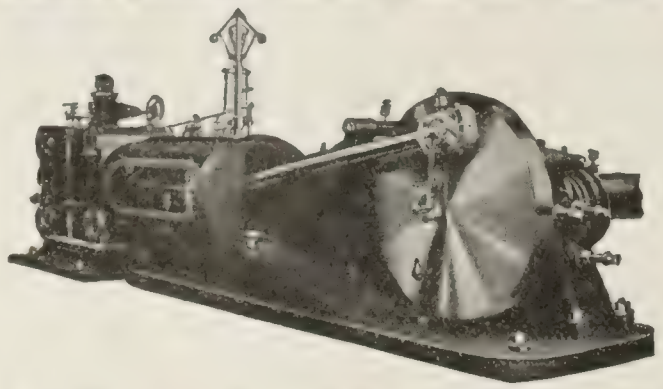
Jackson & Church Company
Saginaw, Michigan

PERFORATED METAL SCREENS
As required for BRICK MAKERS USES



Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.
New York Office
Room 1027B Cortlandt Building

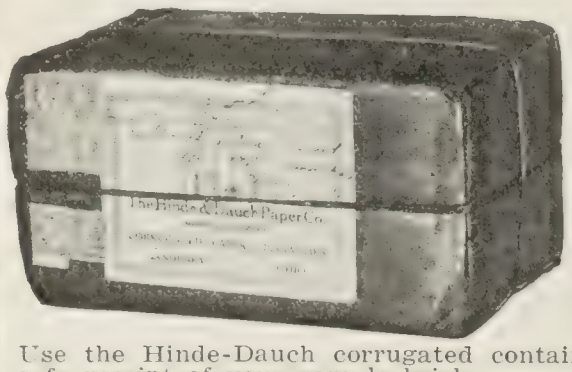
POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

Have You Stopped to Consider—



That whether or not you receive that order, on which you are figuring, may depend upon the condition in which your sample brick reach their destination—your prospective customer?

Use the Hinde-Dauch corrugated container and insure the safe receipt of your sample brick.
Proven the best in actual test.
THE HINDE & DAUCH PAPER CO., Sandusky, O.



Our Specialties

Feeders for Dry Pans and Pug Mills.
Piano Wire Screens.
Elevators and Conveyors.
Counters for Machines.
Trucks, Barrows and Cars.
Draft Gages.
Thermometers and Pyrometers.
Dryers and Kilns.

Ceramic Supply & Construction Co.
Columbus, Ohio

will employ about thirty or forty men. The facilities for handling freight from Milledgeville makes that city a good location for a brick plant, and the fact that there is a large quantity of clay in the vicinity, insures a long future to the clayworking industry in that locality.

IDAHO

After making extensive improvements at its plant, the Idaho Fire Brick Company, Troy, Ida., has resumed operations. A large building for an office and boarding house has been erected. The factory has been entirely enclosed, divided into different rooms and is steam-heated throughout. Drying sheds with a capacity of 20,000 brick are a feature of the plant.

ILLINOIS

The Aaron Brick Company, Highland Park, Ill., has increased its capital stock from $1,000 to $12,000.

The Refractories Engineering Company, Chicago, Ill., has been incorporated with a capital stock of $10,000 for the manufacture of brick and tile. E. P. Stevens, C. F. Stevens and J. Harrington are the incorporators.

Work has been started on the erection of a new brick plant at Lincoln, Ill., which will be operated by Henry H. Randolph of that city. The ground is being staked off for the building, which will be a large one and require several months for completion.

INDIANA

The Thermos Silo Company, Huntington, Ind., has been incorporated with a stock of $10,000 to manufacture and sell vitrified clay block silos.

The Building Products Company, a $100,000 corporation which has been formed by a group of Chicago contractors, is building a brick plant near Hammond, Ind., which will have an annual capacity of 60,000,000 brick.

The Standard Brick Company of Crawfordsville, Ind., is to have a new superintendent, who is J. I. Maugle of New Jersey. Mr. Maugle comes to the Standard Company with an exceptionally good record.

Brick will be used in paving Fir, Eighth and Felton Streets, Michigan City, Ind., according to the board of public works. The board has decided that the brick will be laid on a sand foundation.

The Burns and Manock brick plant, at Montezuma, Ind., which has been in the course of construction since the burning of the old plant, last June, is now completed, and in operation. The new building is modern throughout and is equipped with the latest machinery.

IOWA

At the annual meeting of the Davenport Brick and Tile Company, Davenport, Ia., held on January 21, August E. Steffen was elected president; Dr. H. G. Pape, vice-president, and John Berwald, secretary and treasurer.

At the annual meeting of the Grinnel Brick and Tile Company, Grinnel, Ia., which was held a few weeks ago, the following officers were elected for the ensuing year: W. F. Vogt, president; C. A. Smith, secretary and J. P. Lyman, treasurer.

Articles of incorporation have been filed for the Flint Brick Company, of Des Moines, Ia., capital stock $100,000. The officers of the company are H. F. Graefe, president; G. W. Fowler, vice-president; C. J. Brecht, treasurer and E. A. Brecht, secretary and general manager.

KENTUCKY

The plants of the Louisville Fire Brick Company at Louisville and at Grahn, Carter county, Ky., are both run-

ning, having kept up operations all Winter, although on only one-third or one-half time. The company, however, has been keeping its men employed as constantly as possible, going over the plants, making repairs, etc., and will be ready for business when it develops.

The retail field in Louisville is dull just at this time, the sales managers of the building supply houses reporting that they are working on several prospects but that the deals are hard to close.

The full line of the Hydraulic Press Brick Company, of St. Louis, Mo., which has been handled by the Union Cement Lime & Cement Company in Louisville, Ky., for the past year or so, is being transferred to the Tyler Building Supply Company. Leo M. Parsons, who has severed his connections with the Union Lime and Cement Company, is also changing his headquarters to the Tyler Building Supply Company.

The East End Brick Manufacturing Company, Louisville, Ky., resumed operations on February 8 with orders ahead for a run of some weeks. The company had bid on business calling for a million or more brick. The shut-down was for six weeks, during which time the weather was not such as to permit operations. The lease of the company on its present site is to run six months longer, after which another location will be sought or clay hauled from another location.

Overhauling of machinery at the plant of the Hillenbrand Brick Manufacturing Company, Louisville, Ky., has been completed and operations will be resumed about February 23. A two months' shut-down was all that was necessary for the improvements at the plant. The outlook, according to Oscar Hillenbrand, now secretary and treasurer of the company, is favorable to a big business this season. A. P. Hillenbrand, Sr., is president of the company and Carl Hillenbrand is general manager.

The Coral Ridge Clay Products Company's plant at Coral Ridge, Ky., is in operation with a full force of men, after a shut-down of several months. George H. Fielder, general manager, said that the company had a number of orders ahead which would insure full-time operations for some months to come, if not throughout the rest of the year. Weather conditions have improved considerably and there is nothing to threaten further shut-downs. The directors' meeting of the company, at which the new officers are to be selected, has not been held as yet.

Contractors in Louisville are waiting for settled weather before beginning work on several projects which are on the program for the summer in Louisville. One of these undertakings is a four-story building to be erected on Fourth Street near Broadway. A large structure is being planned for Fifth Street, between Jefferson and Green Streets, and there are numerous suggestions as to other building projects which have not as yet developed into definite shape. The Y. W. C. A. is to spend several hundred thousand dollars in adding to its building at Second Street and Broadway, which should call for a large amount of material.

The Louisville Brick Company's plant at 38th street and Rudd avenue, Louisville, Ky., has started operations after having been closed down since late in December. The stock on hand was holding out well, but new business justified resuming operations. The high water in the Ohio river began to look interesting to the officers of the company during the past week. By that time it had risen past the danger line in the canal and as the Louisville Company's yard is near the river, it is liable to be inun-

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

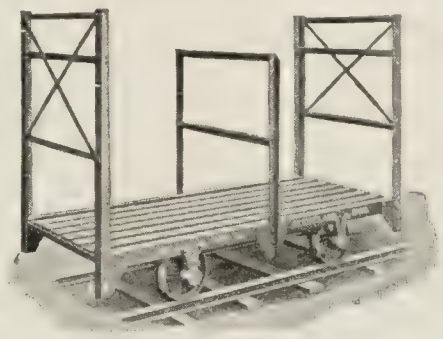
Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O.,,in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook,s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

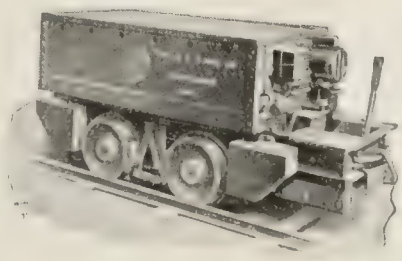
Vigo, Ohio

C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***



No. 1205
Triple Deck Dryer Car supplied with or without decks of wood or steel.

ATLAS High Efficiency Cars and Electric Locomotives



No. 5730
Storage Battery Locomotive. One end operated.

Reduce Your Handling Costs

by the Purchase of Efficient Equipment



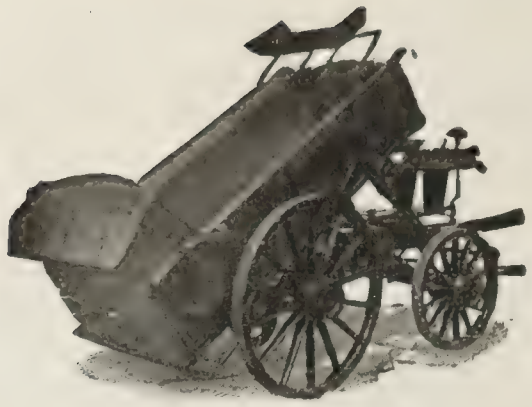
Rocker Side Dump Car
Also made in end dump. Above car made for loading with steam shovel.

will meet your requirements.

Let us send you catalogue and quote prices.

The Atlas Car & Mfg. Co.

Dept. I
1287 Marquette Road, Cleveland, Ohio



Loads in 10 Minutes Unloads in One

And never chips a brick. The **bigger** the load, the **farther** you want to go, the **quicker** you want to get there, the more reason why you should buy a Martinsburg Brick Wagon.

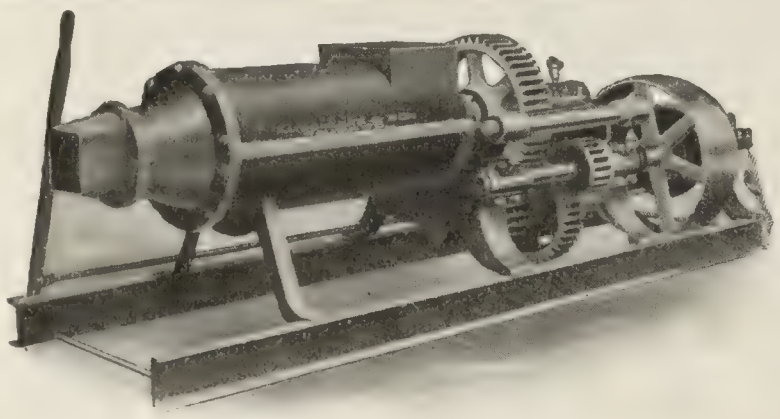
Get the Facts, First. Learn why the Martinsburg Brick Wagon will solve **your** delivery problem. Find out about its large capacity, easy draft, quick unloading and flexibility. No obligation.

The Auburn Wagon Company
Martinsburg, West Virginia

SCHULTZ EQUIPMENT

For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

Telephone Monroe 1629

We also make a complete line of Power Transmission Appliances, Engines and Boilers,

dated should the water go much higher. In 1913 the plant of the company was flooded twice in three months. It would need from eight to ten feet more of water to flood the Louisville plant, and there is little, if any, danger of the water getting high enough to make trouble.

MARYLAND.

The Hancock Shale Brick Company, Hancock, Md., is erecting a new kiln, the capacity of which is stated to be 185,000 brick. The kiln is of a new design and will greatly increase the output of this company's plant.

The Eastern Refining Company has been incorporated for the manufacture and marketing of clay and clay wares, by J. B. Scott, N. E. Arthur and J. J. Ellard of Baltimore, Md. The capital stock of the company is placed at $30,000.

MICHIGAN.

Commissioner George H. Fenkel, of the Department of Public Works, Detroit, is asking bids on 1,000,000 brick, to be delivered within the year ending December 31, 1916.

Building permits for the month of January in the city of Detroit were valued at $1,217,290, as compared with $2,629,260 for the corresponding month in 1914.

The Grande Brick Company, of Grand Rapids, Mich., has taken offices in the Builders and Traders Exchange, and is represented by H. O. Joseph, secretary and general manager of the concern.

The M. H. B. Roofing Tile Company, Detroit, has been organized with a capital stock of $2,000. The parties incorporating this company are men who have been contractors for many years, including Henry Blome, John N. Maul, Anthony J. Hartman, Peter J. Maul, Max and Ernest M. Bartholomael.

The Puritan Brick Company, Detroit, has moved its offices from the Penobscot building to room No. 701 on the seventh floor of the New Farwell building at Griswold street, near Grand River avenue, where the company has much larger, more commodious and better equipped facilities for handling its business.

At the annual meeting of the Detroit Brick Sales Company, Penobscot building, Detroit, the following officers were elected for the coming year: President, H. R. Beegle (Beaver Clay Mfg. Company, New Galilee, Pa.); vice-president, W. H. Hoagland (Clay Craft Brick Company, Columbus, Ohio), and secretary and general manager, G. S. Totten, Detroit. Reports of the officers showed an increase in business of twenty per cent over the previous year. The Detroit Brick Sales Company has made extensive additions to its buildings and property during the past thirty days.

Detroit produced approximately 350,000,000 brick during the twelve months ending December 31, 1914, including common face, hollow and sand-lime brick. Of that production, 225,000,000 brick were made by building brick manufacturers, as follows: J. S. Haggerty, 40,000,000; George H. Clippert and Bros., 50,000,000; Mercier, Bryan and Larkins, 40,000,000; William Clippert, 20,000,000; F. H. Wolf Brick Company, 10,000,000; Porath Bros., 10,000,000; Walker and Frank Brick Company, 30,000,000; Jacob Daniel Brick Company, 3,000,000; Lonyo-Harsha Brick Company, 6,000,000; Sass and Stuve, 3,000,000; John C. McDonald, 3,000,000; Ajax Brick Company, 10,000,000; Lonyo Brothers, 3,000,000, and Joseph Larkins Brick Company, 3,000,000.

MISSOURI

The Waverley Brick and Coal Company, Kansas City.

Mo., has increased its capital stock from $300,000 to $600,000 for the purpose of adding new equipment.

MONTANA.

The Great Falls (Montana) Sewer Pipe and Fire-Proofing Company, with offices in the First National Bank Building, contemplate the erection of a $250,000 plant. Warren Overpack, who is president of this company, was a recent Chicago visitor.

NEBRASKA.

At a smoker in the Hydraulic-Press Brick Company's offices, Omaha, Neb., a few weeks ago, at which about thirty-five prominent architects and contractors were present, it was shown that the cost of hollow building tile construction is very close to that of frame. The demonstration was conducted by William E. Wilson of Mason City, Ia., who proved that a seven room house constructed of hollow tile and faced with face-brick would not cost over $75 more than common wood studding and siding construction.

NEW JERSEY.

Straight and Richards, Irvington, N. J., has been incorporated with a capital stock of $50,000 for the manufacture of clay products. Winfield S. Strait, Mary E. Strait and Victor I. Richards, of Newark, N. J., have been named as interested parties.

NEW MEXICO

The New Mexico Fire Brick Company, Gallup, N. M., has resumed operations after a shut-down. It is expected that the plant will run steady from now on, as the company has a large number of orders on hand.

NEW YORK

The Cummings Brick and Tile Company, Syracuse, N. Y., has been incorporated with a capital stock of $5,000, by Neal Brewster, E. R. Baltimore and Bertram J. Cummins, of 960 Westcott Street, Syracuse, N. Y.

The North Central Clay Products Company of North Tonawanda, N. Y., has sold the entire output of its Beach Ridge plant for the next two years to the Pennsylvania Fireproofing Company. Work has already been started at the Beach Bridge plant to increase its capacity two and one-half times its present output.

The brick companies in and about Olean, N. Y., are working to full capacity at the present time. In fact, it is stated that there are more men employed at the various brick plants in that city now than there were a year ago. The Olean Pressed Brick Company, which never operates during the winter, is planning to start operations in April, as usual. This plant employs an average of about twenty-five men throughout the summer.

NORTH CAROLINA

The Dan River Brick Company, Walnut Cove, N. C., has been incorporated with a capital stock of $25,000 to manufacture brick.

The Plymouth Brick Company, of Plymouth, N. C., has been incorporated with a capital stock of $1,000, by L. C. Blades and C. J. Ward, of Elizabeth City, N. C., D. S. Jones, of Plymouth, and L. W. Norman, of Hertford.

OHIO

The plant of the Columbus Fire Brick Company, Canal Dover, Ohio, was destroyed by fire recently. In a meeting held by the stockholders since the fire, action was

Dryer Cars

Made of cast iron, with steel axles and braces, to prevent warping in the dry kilns. The wheels are pressed onto the axles which are on roller bearings. A strong car and easily moved—in fact, just the car you need.

Pettigrew Dryer Cars have been used by Chicago's leading brick yards for years. We build them to give satisfaction to users.

We also maintain a large engineering department and pattern shop and are therefore in position to quote you on special cars or castings you need.

Pettigrew Foundry Co.

Dryer and Transfer Cars, Car Wheels, Turntables, Grate Bars and Kiln Grates.

Harvey, Ill.



FITS YOUR LADLES

NUGGET
COPPER
HARDENED
ANTI-FRICTION
BABBITT
THE CLEVELAND ALLOYS CO

Not a
"GOLD NUGGET" *nor a* "GOLD BRICK"

but of intrinsic value for

BRICK PRESSES — DRY PANS — PUG MILLS — GENERAL TRANSMISSION, Etc. Price 15c per lb.

The Cleveland Alloys Co.
BEARING-METAL EXPERTS
Cleveland - Ohio

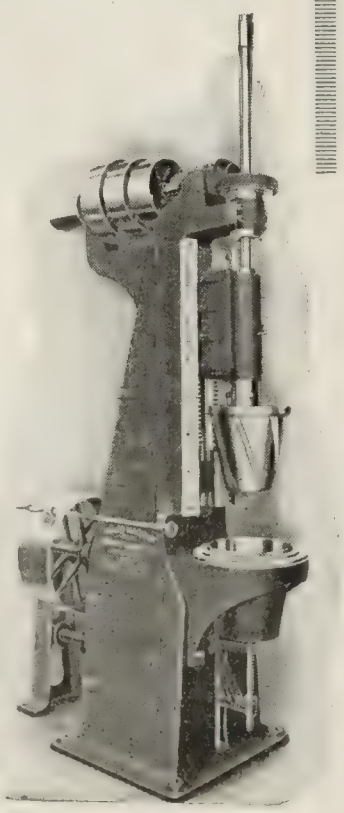
Baird

Pot Molding Machinery

We specialize in
Machines
for the Manufacture
of Pottery

and Guarantee
Every One We Sell.

Write us for information.



Baird
Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.

taken to rebuild the plant at once with some improvements.

One of the largest orders for face brick ever placed in the Cleveland, Ohio, district has just been awarded for 500,000 brick to the Hydraulic-Press Brick Company, of Cleveland. The brick is for use in the new Jewish Hospital, actual work upon which is to be started soon by the Reaugh Construction Company.

Ground is being cleared at Athens, Ohio, by the Dias Brick Company, with offices in the Nicholas building, Toledo, Ohio, preparatory to erecting a steel and fireproof building for the manufacture of paving brick. The plant will be built from private plans and will have a daily capacity of 60,000 brick. The building will have corrugated iron roofing, steel frame roof trusses, brick walls, etc. Motor drives will be installed.

Good business for the past year was reported at the annual meeting of the Trimble Brick Company, Dayton, Ohio, which was held recently. This company operates two plants, one at Glouster and the other at Trimble, Ohio. During 1914 improvements were made at these plants which cost in the neighborhood of $50,000. R. T. Baker, of Dayton, was re-elected president of the company and James E. Conley was made secretary, treasurer and general manager. J. H. Simpson, who had been secretary, was chosen sales manager.

At the offices of the East Liverpool Brick Manufacturing Company, East Liverpool, Ohio, it is announced that the outlook for a heavy spring business is exceptionally bright. The plant is now operating to about seventy-five per cent of capacity. The demand for No. 1 grade, light colored face brick is strong, especially for schools and lodge buildings. This concern is making heavy shipments to both eastern and southern points. In the construction of the new Bellevue, Pa., high school, the face brick of this company was used, several different colors being specified.

OKLAHOMA

The El Reno Brick Company, of El Reno, Oklahoma, with a capital of $10,000, has been incorporated by Henry Schafer, A. C. Kreipke, D. E. Collins and I. D. Myers, of El Reno.

OREGON

The volume of building now going on in Portland, Ore., is small, though the prospects are said to be better than for some time past. The total volume of building permits issued in the city during January amounted to only $372,690, the smallest total in several months and considerably below the total for January last year.

PENNSYLVANIA

An application has been made by C. H. Beatty, of Philadelphia, Pa., for a charter for the Pennsylvania Brick Company, whose plant is to be located in New Hope, N. J.

Thomas W. Pierce, of Topsfield, Mass., has been elected secretary of the Darlington Clay Products Company, which was recently formed at Ridgway, Pa. This concern has increased its capital stock from $25,000 to $50,000. Mr. Pierce is treasurer of Fiske & Company, Inc.

The office building of the Richard C. Remmey & Son Brick Company, Philadelphia, Pa., was damaged recently in a fire which could not be extinguished by the firemen because of the difficulty in dragging the hose across the swampy land

surrounding the building. By the time the firemen were able to get at the blaze, considerable damage had been done.

James B. Spahr, a well known brick manufacturer of Chambersburg, Pa., died recently at his home on West Market Street. Death was due to the lingering effect of a sunstroke which he received three years ago while on a visit to Boiling Springs, Cumberland County, to inspect paving brick.

John M. McDowell, manager of the United Fire Brick Company, Uniontown, Pa., died recently at his home in Dunbar. For many years Mr. McDowell was engaged in the mercantile business at Percy, Pa., but in 1894 he moved to Dunbar and became interested in the manufacture of brick.

The Dillsburg brick plant, near Dillsburg, Pa., will soon be reopened by John F. Kissinger, of York, Pa., who has secured an option on the property. Mr. Kissinger, together with John Hosfelt, of Shippensburg, president of the Shippensburg Gas and Electric Company, will put the plant in operation about April 1, for the manufacture of building and paving brick and fireproofing.

Brick manufacturers in Allegheny county, Pa., have been very busy arranging a complete report of the number of employes, wages paid, improved machinery installed, etc., preparatory to the arrival of Everett B. White, an expert of the Department of Commerce at Washington, D. C. Mr. White has been sent to Pittsburgh to take a census of all industries in Allegheny county.

Fourteen managers from the various branch offices of the National Fire Proofing Company held a two days' meeting in Pittsburgh recently for the purpose of discussing the building situation. The eastern managers reported that there had been a marked improvement in the East, and that the outlook was very good. As to the West, the managers from that section said that little improvement had taken place. The discussion developed, however, that there was a brightening of business prospects all across the country.

The total cost of all building operations in Philadelphia for which permits were issued during the month of January, according to figures compiled by Statistician William Gamble, of the Bureau of Building Inspection, is $910,805, a decrease of $350,545, as compared to the figures of the previous month, and a decrease of $337,180, in comparison with the figures of January, 1914. Thirty-three permits were issued for the erection of two-story buildings, and one hundred and sixty operations were begun during the month at an expenditure of $376,050, while for dwellings of the three-story type, only eight permits were granted and eleven operations started, costing $49,700. Eleven permits were granted for garages, whose estimated cost was $23,520.

Manufacturers and employers in Pennsylvania are deeply interested in the measure that has just been introduced in the House of Representatives at Harrisburg by Representative Gans, of Philadelphia, which has to do with workmen's compensation. This bill seeks to create an industrial accident board. Every employe within the state is presumed to have accepted the act. If the act is rejected by the employe, the employer retains common law defense of contributory negligence. The rate of compensation is fixed by the act at 50 per cent within a limit of three hundred weeks in ordinary disability. For permanent disability, the limit is five hundred weeks and the minimum $4,000. In case of death, $10 per week

See It At Detroit

At the National Brickmakers' Association Convention held in Detroit, Feb. 15th to 20th, we will exhibit a machine which will interest every user and manufacturer of paving brick. We ask you to carefully examine it.

Marsh-Capron Grouter

For Brick Pavers

Simple — Compact — Sturdy

As high class in every respect as the well-known **M-C Rail-Track Pavers** is this little **Marsh-Capron Grouter.** Highway Commissioners throughout the country are backing us in its introduction. By boosting its sale you will make brick paving cheaper and more popular than ever.

Send for full information

MARSH-CAPRON MFG. CO.

468 Old Colony Bldg. CHICAGO

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

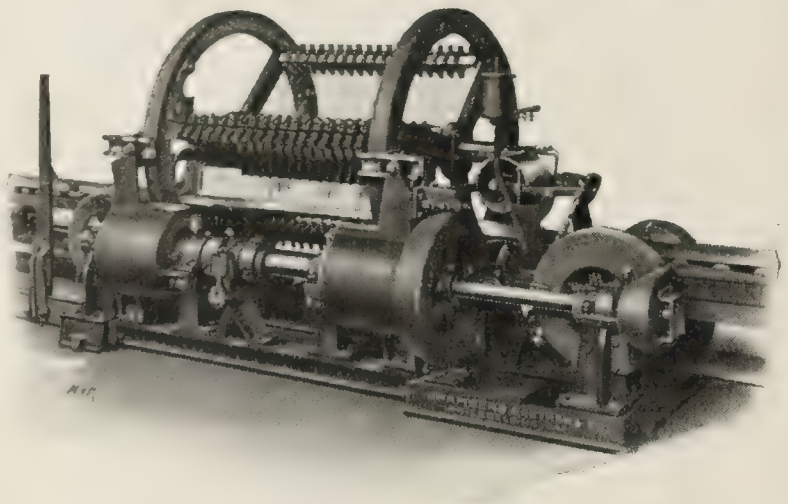
Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

New Multiple Brick Cutter



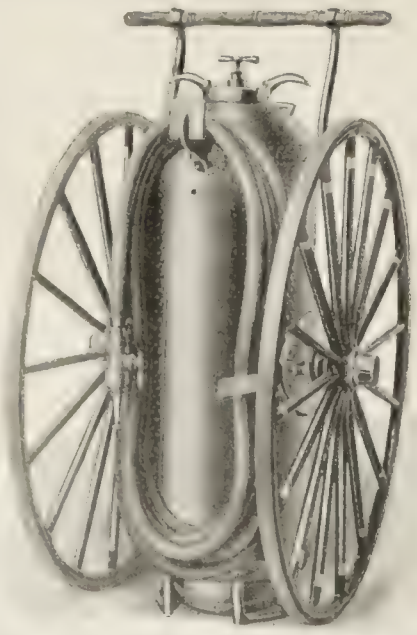
THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.
40 Liberty St.
UTICA, N. Y.

for three hundred weeks is allowed, together with medical and surgical treatment.

SOUTH CAROLINA

Rutherford and Company, Hamburg, S. C., has been incorporated with a stock of $60,000 to manufacture brick and tile.

A resolution was introduced and passed in the lower house of the South Carolina state legislature at Columbia on January 26 which proposed the appointment of a committee of five to investigate the feasibility of establishing a brick plant on the State farm and operating it with convict labor. The resolution was introduced by Mr. Lee, of Spartanburg, and was sent to the senate by a large vote.

TENNESSEE.

The Dixie Brick and Tile Company, Puryear, Tenn., is making preparations to re-open its plant, which has been closed for several months.

The Bush Brick Company, E. T. Lewis and Company and other brick manufacturers of Nashville, Tenn., are maintaining a permanent exhibit of brick and terra cotta in the Nashville Manufacturers' Exhibit on Third Avenue, North, opposite the Stahlman Building.

Architect L. M. Weathers, Randolph Building, Memphis, Tenn., has drawn plans for a $20,000 brick municipal school building at Camden, Tenn. Nashville architects have planned a $40,000 brick court house at the same place. W. A. Lashlee will build a $15,000 fireproof hotel in the same town.

In the vicinity of Nashville, Tenn., the prospects for spring building are good. Several more buildings are to be erected at the George Peabody College in West End. The interior finishing is to be done at the Galloway Memorial Hospital. The Nashville Country Club will be built on the Belle Meade Park Addition sometime in the summer.

The Nashville Builders' Exchange recently elected officers for the year, James A. Daugherty succeeding R. T. Creighton as president. J. W. Patrick, a brick contractor, was re-elected first vice-president and Joseph H. Peter, second vice-president. Wm. F. Holt was elected treasurer. H. Lee Parish continues as secretary, being elected by the board. The board of directors is composed of ten members selected from allied interests.

TEXAS

Post, Texas, is to get a new brick and tile factory, if the citizens of that town will purchase a certain amount of stock in the new company. The amount has been set at $3,000, and it is believed that it will be easily subscribed. Frank Bowman, a clayworker of West Virginia, is in charge of the work of establishing the plant. It is the intention of the company to manufacture brick, drain tile and silo blocks. The clay bed has been tested and the material found to be excellent for the manufacture of these products.

UTAH

The Leek Brick Company, of Ogden, Utah, has been sold to J. P. Cahoon, of Salt Lake City.

A fire started recently in the sales room of the Ogden Sewer Pipe and Clay Company, Salt Lake City, Utah, was extinguished before much damage was done. The origin of the fire was not discovered.

WASHINGTON

The situation at Seattle, Wash., is fairly good so far as the demand for brick is concerned. Orders for six million brick are to be placed in the near future for large struc-

tures. The yards, however, are finding prices unsatisfactory, and it is understood that some orders are being placed practically at cost of manufacture.

The Washington Brick, Lime and Sewer Pipe Company, Spokane, Wash., has secured an order for sixty carloads of sewer pipe for the city of Astoria, Ore. The contract calls for about $20,000 worth of material and was secured in the face of sharp competition from California and other coast concerns. The unusual feature of this order is that it calls for thirty-inch pipe, one of the largest sizes made, and from this size down to four inches in diameter. The material is for a trunk sewer, which will be five miles long.

The Northern Clay Company of Auburn, Washington, has secured the contract for furnishing the architectural terra cotta for the nine story building of the Terminal Company at Seattle. The company also has the contract for the terra cotta trimmings on the Ballard high school, being erected by the Sound Construction and Engineering Company. The Fischer building on Third Avenue near Pine Street, Seattle, is to have five stories added, making an eight story structure. The face of the present building is to be removed and a solid terra cotta front put on the entire height of eight stories.

WEST VIRGINIA.

The Municipal Shale Brick Company, Martinsburg, W. Va., has been incorporated with a capital stock of $250,000 to manufacture building blocks, vitrified fireproofing and paving brick.

It has been estimated that the final cost of buildings and equipment of the plant of the new Municipal Shale Brick Company, which is being formed at Martinsburg, W. Va., by A. B. Noll, will be in the neighborhood of $200,000. Pennsylvania and Maryland capital will be back of this new concern. An immediate expenditure of about $75,000 is contemplated for the erection of a plant.

WISCONSIN

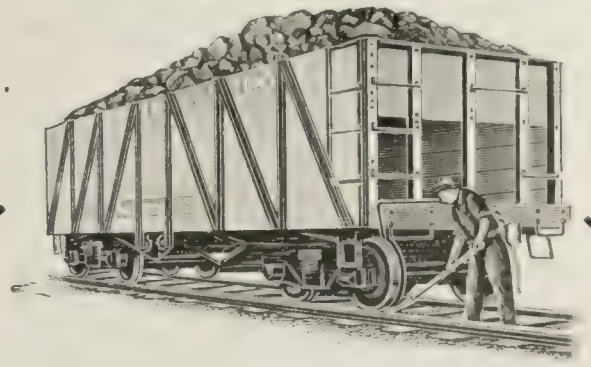
The Manitowoc Clay Company, Manitowoc, Wis., has been reorganized and incorporated with a capital of $200,000. It is reported that the plant will be enlarged.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

Statistics just recently completed show that West Virginia is rapidly forging to the front as a pottery producing state, and the belief is general that before long it will crowd Ohio and New Jersey for honors in this respect. With fifteen plants now operating in the Panhandle district, the record is remarkable, for only a few years ago there were less than six potteries in the state, and these were located in the Wheeling district. Cheap fuel and competitive transportation facilities have been in favor of the manufacturer locating in West Virginia. After the potteries were established in Wheeling, one was located at Clarksburg, under the name of the Radford Pottery Company, which concern manufactured art pot-

When I put my shoulder to the wheel something is bound to move



Helper Bill told the boss, "It's no trick at all to move one of the big 50-ton cars since I came on the job. Before, he says, they had to call the whole gang of ten men to even move an empty one and would wait for the switcher to spot a loaded car.

$4.00 Hires Me For Life,

Yours for moving cars

"IDEAL" Car Mover

P. S. Send for me for trial—no obligation to purchase.

We specialize in clay plant equipment, including elevators, screens, cars, track, switches, etc.

Write today for our Catalog

H. B. SACKETT SCREEN & CHUTE CO.

SACKETT 1685 ELSTON AVE CHICAGO

1681 Elston Ave., Chicago

Branch Warehouse:
191 Medford Street, Charlestown, Mass.

SACKETT 1685 ELSTON AVE CHICAGO

LEHIGH PORTLAND CEMENT CO. LEHIGH ALLENTOWN, PA.– CHICAGO, ILL.

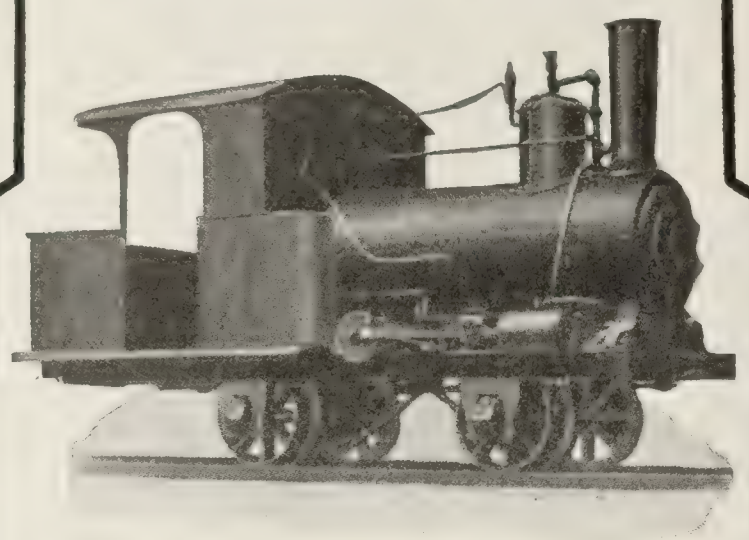
10% Of All Cement Used in United States

is

LEHIGH PORTLAND CEMENT

DEWEY

First Cost Never Determines Results



THE DEWEY

5

TON LOCOMOTIVE

COSTS

$1200

F. O. B. GOLDSBORO, N. C.

Horses and Mules may cost less at first, but feed bills are growing bigger every year and the horses older. No economy there.

FOUR POINTERS

1. **It has 40 h. p.**
2. **It runs on any track, steel or wood.**
3. **Chain drive makes steep grades easy.**
4. **Upkeep less than horse feed.**

We can show you and will if you write us.

DEWEY BROTHERS

GOLDSBORO, N. C., U. S. A.

DEWEY

tery. Then a sanitary plant was started at Mannington, and later plants were located at Chester, Newell, Grafton, Clarksburg and other points. But still the industry is increasing, for announcement has been made that another pottery is to be located at New Cumberland, W. Va., which will manufacture hotel ware exclusively. This new plant will be under the management of Lee Leechman, and will start operations within six weeks.

The Louisville Pottery Company, Louisville, Ky., began running full time on the first of the month, looking forward with considerable confidence to a market that will continue to improve as the season develops. Just now the most active line is in flower pots, the florists calling for quantities of pots for their work. Jugs and jars are inactive, although the jar demand is expected to open up better than it has for some time, later on. The advance of the prohibition wave in this section of the country has affected the jug trade, according to Mr. Snyder, a very large proportion of the liquor which is handled by the mail order houses going in bottles rather than in jugs.

Plans are being worked out by the D. E. McNicol Pottery Company, of Clarksburg, W. Va., for doubling of the capacity of that plant before another year passes. While little has been said about these plans, yet it is generally understood that the company contemplates erecting at least seven more kilns. It has been pointed out that the business of the company is such that steady operations on a large scale are assured. This concern, through another corporation, is also operating a plant at East Liverpool, Ohio, but the Ohio and West Virginia concerns are distinct and have no connection with each other. Whether or not the Ohio plant will be operated after the addition has been built at the Clarksburg plant is not known.

No effort has been made as yet to place the idle pottery of the Pennsylvania China Company, at Kittanning, Pa., in operation. The plant is controlled by the Colonial Trust Company, of Pittsburgh, Pa., and was formerly operated under the management of Charles Howell Cook, of Trenton, N. J. This plant, and one located in the Wheeling district, and the former Brunt Pottery, at East Liverpool, Ohio, are the only three idle potteries in the western territory. The Globe pottery at East Liverpool, Ohio, which was idle for several years, is now being operated by the T. A. McNicol Pottery Company.

Daniel K. Bayne, of New York, president of the Trenton Potteries Company from 1892 to 1908, was recently stricken with pneumonia following an operation, and died in the Post-Graduate Hospital, New York. Mr. Bayne had apartments at the Trenton House during the time he held the presidency of the Trenton Potteries Company, which he was instrumental in organizing. Although he retired as head of the company some six years ago, he still retained his holdings in the company and was a member of the Board of Directors and the executive committee.

Abiding by a rule that all officers shall be nominated and elected by a referendum vote of the trade, instead of in annual convention, members of the National Brotherhood of Operative Potters, whose headquarters are in East Liverpool, Ohio, have just completed nominations. Eleven names have been placed as candidates for president, and seven names for first vice-president. This office always remains in the eastern or Trenton district. Thirteen names have been filed as nominations for secretary-treasurer. For delegate to the American Federation of Labor

Convention in 1915, forty names have been placed in nomination. Present officers are: President, Edward Menge; secretary-treasurer, John T. Wood, both of East Liverpool, Ohio; Frank H. Hutchins, is first vice-president, and maintains his office in Trenton. Those who have been nominated have the right to decline by notfying the officers. In May ballots with all names on will be distributed to the various local unions in the organization, and the ballots later forwarded to headquarters.

Efforts to induce Eastern capital to locate a pottery plant in Memphis are being made by John C. Ryan, general agent of the Nashville, Chattanooga & St. Louis R. R. A certain clay has recently been discovered along the right-of-way in Henry county, Tennessee, and has been pronounced by government ceramic experts to be equal in every respect to the famous English ball clay. Hundreds of carloads of this clay have been shipped North and East, where pottery plants have used it in manufacturing high grade insulators, tile, sanitary ware and dishes of all kinds.

The Ionia Pottery Company, Ionia, Mich., held its annual meeting recently, at which the following officers were elected: Fred Cutler, Jr., president; R. A. Hawley, vice-president; Harvey E. Kidder, secretary-treasurer, and Henry Witzel, superintendent of the plant. The business for the past year was declared the largest in the career of the concern. However, only a nominal dividend was declared, the larger part of the earnings being put into extension of the plant, which now employs about forty-two men.

All pottery plants located along the Ohio river front in the East Liverpool, Ohio, district, were flooded during the first week of the month, on account of the high water in the Ohio river. The flood, however, did not reach the high stage of several years ago, when it was impossible to get into or out of the town by rail, and when all river front plants were inundated with from ten to twelve feet of water.

W. Edward Wells, secretary-treasurer of the Homer Laughlin China Company, of East Liverpool, Ohio, has been elected to a similar position in the North American Manufacturing Company, which concern controls the lighting, water system and much real estate in the new pottery town of Newell, W. Va. Marcus Aarons of Pittsburgh was elected president of the company and his brother was elected vice president.

The manufacturing of chemical porcelain wares in the United States gives promise of becoming a strong factor in the pottery trade. This business was first created by the present European war, and the Hall China Company, of East Liverpool, Ohio, was the first to go into the business. Now comes the announcement that several other pottery concerns contemplate similar lines, and have started to make molds. This ware is made of a vitreous china body, and the majority of the pieces are cast.

Charles E. Doll, formerly with the W. S. George pottery organization at East Palestine, Ohio, and now in charge of the new plant of the Mount Clemens Pottery Company, of Mount Clemens, Mich., has started to operate that plant to capacity. Unlike other pottery concerns, this firm will have no road salesmen, all business will be done direct from the home office. The plant has been called the "Daylight pottery," for it is contended there is not a dark spot in the entire plant.

General operations in the domestic pottery plants of

Service, Not Sentiment

There are many types of belting—Leather, Rubber, Gandy and the belts resembling "Gandy" in general appearance and claimed to be "just as good but cheaper." When you buy belting you want to get the greatest service and the maximum satisfaction for the least money—the belt you want to buy is the belt from which you get the best results.

Buy Gandy and Save Money

The initial cost of the Gandy is only about one-third that of Leather belting and much less than that of Rubber belting, while it does the work equally as well.

The Gandy Belt is not an experiment. It has been on the market more than thirty-five years. The splendid results it is giving under all conditions and in every field of effort, warrant a careful investigation by you before **you** place your next order.

We will explain our proposition fully to you if you return the coupon below.

Gandy Belting Company

732 W. Pratt Street

Baltimore, Md.

New York Office **36 Warren Street**

Tear Off Along This Line

The Gandy Belting Company,
732 W. Pratt Street,
Baltimore, Md.

Gentlemen:—Please send me without obligation, a sample of Gandy Stitched Cotton Belting, and all the information I need to give it consideration.

Name .....

Address (Street).....

City ....., State.....

Stop Wasting Fuel!

You can if you will install the

Hook System of Burning Clay Products

This is not an experiment but it has proven its worth in scores of kilns. One company burned a 22-foot kiln of drain tile in 26 hours, including time for water smoking and high fire. Another company burns drain tile in less than 30 hours, using only 6 tons of coal, and including watersmoking period. Still another reduced its burning time on a full kiln of brick from 168 hours to 77 hours.

We can give you countless references—but better still we guarantee satisfaction. All we ask is that you investigate our system—there will be no obligation on your part.

We will reduce your cost of burning—will greatly increase the capacity of your present kilns due to turning them oftener—will improve the quality of your ware.

The Hook System

Can be installed in your present kiln—round or rectangular, old or new.

Ask us more about it.

Hook Patent Kiln Co.

Main Office: Vigo, Ohio

Canadian Office:

250 Defferin Street Toronto, Ont.

the West are on a larger scale than during January. The early buying season is over, and the host of buyers who visited the district left some favorable business behind them. All plants in the Eastern Ohio district are now in operation, the last resuming a few days ago. The prospects for continued operations are most encouraging.

The former plant of the General Porcelain Company, at New Cumberland, W. Va., is to be overhauled and placed in operation, but the character of ware to be made has not been announced.

At the annual meeting of the W. S. George Pottery Company, at East Palestine, Ohio, the following officers were elected for the current year: president, William S. George; vice president, William C. Wallace; secretary, Robert N. Logan; treasurer, James F. Stoddard, and general superintendent, W. Campbell George.

At Parkersburg, W. Va., is located the largest electric porcelain plant in this country, it being a concentration of interests of a number of porcelain plants that were formerly located in Ohio districts. It is possible that another plant will be built at Clarksburg within the coming year, and by interests who are now operating in the East Liverpool, Ohio, district.

V. Q. Hickman, of Pittsburgh, Pa., has been elected president of the Smith-Phillips China Company, of East Liverpool, Ohio, and Joseph T. Smith, vice president. William H. Phillips was elected secretary-treasurer, and Thomas Carr, formerly owner of the Warwick China Company, at Wheeling, W. Va., was placed at the head of the manufacturing department.

Domestic pottery manufacturers are now giving more attention to details in the manufacturing departments, and in several instances modern cost systems are being installed. The first of these systems to be ordered was installed in the plant of the Crooksville China Company, at Crooksville, Ohio, and now the Knowles, Taylor and Knowles Company, at East Liverpool, Ohio, is installing a cost system.

The property of the American China Company, at Toronto, Ohio, which has not been operated for several years, and is now being used by the National Hydro Carbon Company, is to be sold to pay off the mortgage indebtedness. The National company has deeded the property to A. S. Buckingham, and he, with C. N. Broady, of Washington, Pa., will co-operate to sell the property for the bnefit of the mortgage holders.

Freight Tariffs and Troubles

(*Continued from Page 362*)

The increased rates on kaolin clay from East Liverpool, Ohio, to various destinations, which were put in force by the roads, have again been reduced and the order of the Commission in this investigation, No. 470, has been rescinded.

Changes in Freight Rates

The following changes in freight rates affecting clay

products have become effective since our last issue:

From Eastern Points

From Auburn and Hamburg, Pa., brick, to Undercliff, N. J., $1.84 per net ton.

From Exton, Pa., silica brick, to Perth Amboy, N. J., $1.26 per net ton.

From Gettysburg, Pa., salt glazed brick when shipped the same as pressed brick, individual brick not being packed, building brick, chimney, common, fire, front, face, hollow, lime, paving, pressed, sand, stack or vitrified brick, clay, fireproofing made of clay, hollow and building tile and tile slabs, to Wilmington, Del., $1.50 per net ton.

From May's Landing, N. J., common brick, to Quarryville, Pa., $1.68 per net ton.

From Wyomissing, Pa., brick to Stroudsburg, Pa., $1.58 per net ton.

From Middle West Points

From Chaska, Minn., brick, except fire or enameled brick or terra cotta, to Winnipeg, Man., 17.25 cents.

From Indianapolis, Ind., old and broken fire brick, to East St. Louis, Ill., and St. Louis, Mo., $1.26 per net ton.

From Indianapolis, Ind., brick, to Bloomington, Ind., 95c per net ton and to Bloomfield, Ind., $1.05 per net ton.

From Matherville, Ill., clay, to Bettendorf, Ia., 65c per net ton.

From Red Wing, Minn., sewer pipe, to Kamsack, Sask., 37.6c per cwt.

From Robinson, Ill., building blocks and drain tile, to Merom, New Lebanon and Sullivan, Ind., 63c per net ton.

From Scanlon, Minn., fire brick, to Eureka, Mont., 25c per net ton.

From St. Louis, Mo., East St. Louis and Whitehall, Ill., sewer pipe, to Kamsack, Sash., 44.1c per cwt.

From Uhrichsville, Ohio, common, fire, hollow, pressed and radial brick, to Stephenson, Mich., $2.85 per net ton.

From Waynesville, Ill., brick and articles taking the same rates, to Allentown and Decatur, Ill., 63c per net ton; to Danville, Mattoon and Champaign, Ill., 89c per net ton; to Wenona, Ill., $1.05 per net ton; to El Paso, Ill., 84c per net ton; to Kankakee, Ill., $1.21 per net ton and to Chicago, Ill., $1.12 per net ton.

From Western Points.

From Carnegie and Walden, Cal., broken brick or terra cotta, to Lincoln, Cal., 7½c per cwt.

From Des Moines, Ia., sewer pipe, to Kamsack, Sask., 42.6c per cwt.

From Ft. Dodge, Gypsum and Lehigh, Ia., sewer pipe, to Kamsack, Sask., 41.6c per cwt.

From Reno, Nevada, brick, to Loyalton, Cal., 7½c per cwt.

From Swadley, Colo., brick, to Fort Russell, Wyo., and Longmont, Colo., 7c per cwt.

From Southern Points

From Blue Siding, N. C., common brick, to Albemarle, Lexington, Norwood and Whitney, N. C., $2.60 per M.; to Dunn and Lumberton, N. C., $2.00 per M.; to Fayetteville, N. C., $1.85 per M.; to Goldsboro, N. C., $2.25 per M.; to Greenville, N. C., $2.95 per M., and to Winston-Salem, N. C., $2.75 per M.

"Build Now" Movement in Chicago.

Now is the time to build, was the watchword adopted at the recent meeting of the representatives of the building material interests of Chicago, comprising the merbership of subdivision No. 52 (building materials) of the Chicago As-

Is it worth anything to you to reduce in pronounced form your burning costs and time of burning?

If it is, then why hesitate about installing the

Underwood Producer Gas Burning System

Patented

You need its economies, its conveniences, its numerous other advantages to get the best out of your business.

The Manufacturers Equipment Co.

Everything for the Clayworker

Dayton, Ohio U. S. A.



Patented May 2, 1911.

RAIN OR SHINE

Our first system

Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men."

Our last system

The Donnelly Brick Co., New Britain, Conn., says:

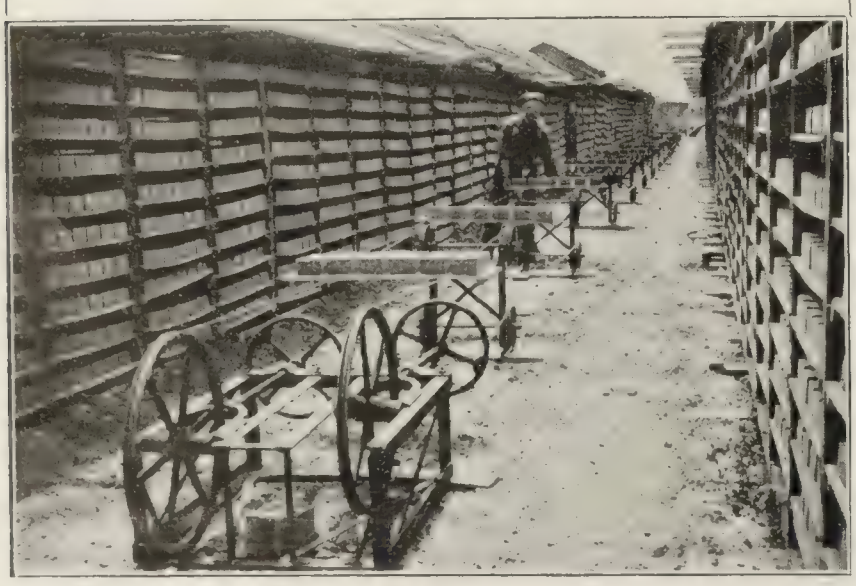
"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"

Write for literature and prices.

The Marinette Iron Works

C. J. Anderson & Son, Proprietors

Marinette, Wis.



sociation of Commerce, held Thursday, January 21, in the committee rooms of the building material exhibit in the Insurance Exchange Building.

Frank A. Mitchell, chairman of the subdivision, presided, and the attendance was representative of the brick, cement, stone, tile, roofing materials and allied interests of the association. At no time in the past ten years have conditions for building construction been so favorable as at present, it was stated. Low cost of materials, adequate labor and an easy money market were among the factors cited by the building material men as most conducive to a prosperous building year.

Chicago has already taken the leadership among the principal cities of the country, it was pointed out. The building records for the month of December were quoted to show that Chicago was the only large city in which the permits issued during that month showed an increase of five per cent over the figures of a year ago. Fifty members of the subdivision were in attendance, and made plans to hold a monthly meeting. One of the important activities will be the compilation of information showing the advantages of present conditions and carrying on an active campaign for increased building in Chicago.

Florida Completes Another Brick Highway.

The dream of good roads boosters has come true, according to the St. Augustine "Record." A brick paved highway from St. Augustine, Fla., to the Duval county line is at last an accomplished fact. In the future automobile parties will not start on a trip over this link in the Johnson Anderson Boulevard with the haunting dread that they will terminate their ride in a bog or sand bed. The brick is all laid on this stretch, and many automobiles have already sped over the smooth, hard surface.

While the brick is down, the finishing touches have not yet been administered, and quite a little work remains to be done before the plans are completely complied with. On both sides of the brick pavement the loose earth must be smoothed and packed, giving the road a width of eighteen feet, nine feet of brick and four and a half feet of shell on each side.

The plans call for the grading, smoothing and rolling of this material, which will be further strengthened by additional shell. When this is done, the road will be in accord with the original plans.

At several points, about nine miles from the city, men are at work relaying brick where ruts had formed, due to opening this part of the road too early. When the contractor was at work on this stretch, the heavy and incessant travel over the road rebelled against the detour that was practically impassable, and he opened the road at this point while the paving was in progress. This resulted in a depression under the pressure of the wheels and ruts were formed. The repair gang are removing the brick, packing the foundation firm and relaying the pavement.

The short stretch of road in Duval county between the two paved sections will be improved by the Duval county authorities at once, and travel to and from Jacksonville will in future be easy and pleasant.

Manganese Supplies Curtailed by the War

Among the important industries that have been affected by the war in Europe is the production of manganese ore and alloys. The ores are used in the manufacture of glass and dry batteries, and the alloys are essential in the manufacture

of steel. In 1913 the United States received from Russia and India about three-fourths of the manganese ore required for domestic use and imported from England and Germany about half the amount of ferromanganese needed by the steel industry. D. F. Hewett, of the United States Geological Survey, who has examined the figures showing the imports of these materials for the first nine months of 1914, states that the receipts of manganese ore have been 42,550 tons, or 16 per cent less and those of ferromanganese 37,420 tons, or 37 per cent less than for the corresponding period in 1913. As the Russian ore is shipped from the ports of Poti and Batum on the Black Sea, through the Bosporus, the entrance of Turkey into the war in October and the consequent closing of the straits to English ships will greatly curtail if not completely stop the export of all Russian ore. It seems probable, therefore, that the receipts of ore during the last three months of 1914 were much less than for the corresponding period in 1913. The imports of ore for the entire year of 1914 were probably at least 25 per cent and of ferromanganese 40 per cent less than for the preceding year.

The rise in prices of ore and ferromanganese reflects the decline in imports. According to the schedule published by the Carnegie Steel Company, this rise ranges from 80 cents to $1 a ton, according to the grade. The price for standard 80 per cent ferromanganese was almost constant at $40 a ton until August. During the few weeks of confusion following the outbreak of the war extraordinary prices reaching as high as $140 a ton were quoted, though it is probable that little was sold at prices above $100 a ton. From August there was a steady decline to $62 a ton until November, and recently the price has risen to $80 a ton. The price of spiegeleisen has shown similar variations but to a less degree, ranging from a minimum of $22 in May to $26 a ton at present.

The effect of this shortage of ore in the United States and the consequent rise in prices has been to stimulate interest in domestic managanese deposits and to cause vigorous development of producing mines. Although several mines previously idle have been reopened, no important new sources appear to have been found. Estimates of production from a few mines only are available, but it is doubtful if the total production of ores for 1914 greatly exceeded if it even equaled that for 1913, which was 4,048 tons. An interesting consequence of the shortage of ferromanganese has been the attempt to establish new reduction plants to use sources of ore hitherto not available. The Noble Electric Steel Company, having access to cheap electric power at Heroult, Cal., is attempting to establish the industry, using ores from Mendocino county. In the East the success of the attempt to make a low-grade ferromanganese from manganiferous iron ores from the Cuyuna range, Minnesota, by the American Manganese Company at Dunbar, Pa., remains to be established.

The disturbances of the war will make necessary a number of adjustments in the foreign industries using manganese. The English steel industry depends largely on ferromanganese made from Indian and Russian ores, and the supply from India will probably be assured even if the Suez Canal were to fall into the hands of Turkey. Germany, however, with only scanty domestic ore resources, has been importing increasing amounts of ore from the Caucasus in Russia, and large investments of German capital have recently been made in this district. Unless there has been extarordinary foresight in assuring a supply, the continuance of the war for a year or more will make the shortage of manganese ore keenly felt in the German steel industries.

There are Seven Big Points in the Sturtevant System

(REG. U. S. PAT. OFF.)

The Sturtevant Mechanical Draft System of Drying Clay Products has been evolved by Sturtevant engineers—perfected by them after careful study and experiment.

It is based on a fundamental principle—It is specially designed for the clay to be dried.

No two clays are alike—therefore treatments should be different. If your clay is balky—try the Sturtevant way.

The Sturtevant System is perfected by years of practical experience.

1: It dries perfectly tender clays—insuring uniformity of product, freedom from waste and certainty in delivery.

2: It cuts fuel bills effecting economy in production and greater profits.

3: It makes water smoking unnecessary, cutting fuel bill still further, and saving time and labor.

4: It speeds up your plant by drying your wares quicker thereby giving a chance to cheapen production.

5: It dries products uniformly and trims waste in the kiln to the minimum.

6: It eliminates shutdowns caused by the "drying" process being unable to catch up with the rest of the plant.

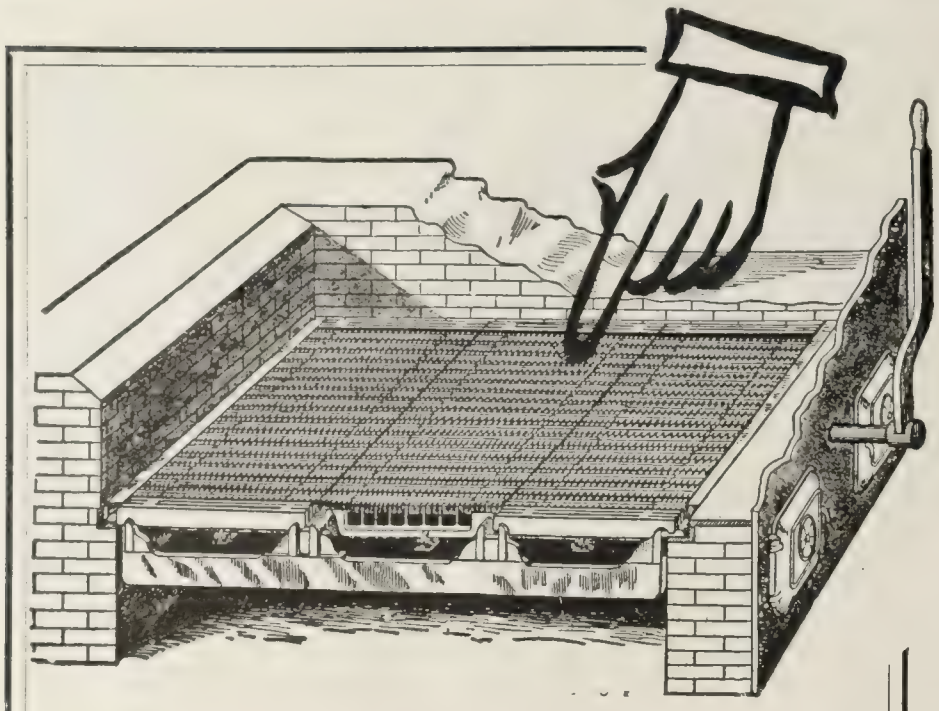
7: It uses waste heat from power plant and kiln and draws every B. T. U. out of it.

We maintain a board of expert drying engineers. Their service is at your disposal. Tell us your drying troubles.

B. F. Sturtevant Co.

Hyde Park, Boston, Mass.

and all principal cities of the world.



More Steam from Your Boilers

Reduced cost of fuel — *burn any coal.*
More dividends for your stockholders.

These advantages are being accomplished by using

Martin Grates

Read the following letter:

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10, 1914.

Martin Grate Co., Chicago, Ill.

Gentlemen:—

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.
(Signed) C. A. Reaver, Secy.

The Martin Grate Co.

347 S. Dearborn St. Chicago, Ill.

National Chamber Holds Annual Meeting.

Held at a time when the business of the United States was on a fine-edge and with the Government deeply concerned over the welfare of the commercial world, the third annual meeting of the Chamber of Commerce of the United States, held in Washington, D. C., on February 3, 4 and 5, opened to the country a long sought avenue of understanding and co-operation.

Members of the national administration again gave cordial recognition to the purpose for which the Chamber of Commerce was conceived, a scant three years ago. President Wilson, his cabinet members and high government officials responded with alacrity to the organization's invitation to make addresses—and they made the most of their opportunity. Government representatives also sat continuously on the floor of the convention as interested listeners.

The administration's merchant marine proposal became the main topic of deliberation at the meeting. With characteristic desire for the facts and the truth, six hundred delegates from every corner of the United States sat through a mighty contest of oratory and exposition on the shipping subject, which lasted the better part of two days of the three-day meeting.

Secretary Bryan in his address on "American Investments Abroad" on the afternoon of the first day of the meeting, frankly referred to the administration's project of carrying American commerce in government-owned bottoms. It was the opening gun of the shipping controversy. The applauders of Mr. Bryan's plan met the expressed sentiment of the opposers, who at one time shouted "No! No!" and Mr. Bryan knew he was making his plea at least to a divided court.

President Wilson spoke at the evening session of the first day of the meeting. Entering the hall to the hearty plaudits of the standing twelve hundred men and women—the delegates and their guests—he at once took the platform and was presented. In his happiest vein the President launched into a cordial address, which lasted an hour.

Continual bursts of applause met the truisms, the pleasantries and the passages of serious import which the President gave his hearers. He congratulated the National Chamber on its democratic organization, and asserted that it was so fashioned as to strengthen representative government.

The President warned his hearers that the men on the outside of affairs had to depend for his action on the advice of those on the inside; that the commercial interests of the nation, on the inside of their own affairs, had but to let the government know their needs and they would have them satisfied if those needs were just.

President Wilson admitted frankly that he was in doubt as to the relation the anti-trust laws should bear toward combination for the foreign trade, and he asked the business men to give him their advice.

John H. Fahey, of Boston, was re-elected president of the National Chamber. Harry A. Wheeler, of Chicago, and A. B. Farquhar, of York, Pa., were elected honorary vice-presidents; Henry L. Corbett, of Portland, Ore., and Robert F. Maddox, of Atlanta, Ga., were re-elected as vice-presidents. John Joy Edson, of Washington, D. C., was re-elected treasurer, and R. G. Rhett, of Charleston, S. C., was elected chairman of the executive committee.

Alliance Rug Brick

MANUFACTURED BY

THE ALLIANCE BRICK CO.

ALLIANCE, OHIO



Alliance Multi-Color Rug Brick No. 76.

Alliance Rug Brick excel all other brick as to beauty of coloring. The chromatic scale of colors runs through the beautiful Rug-texture faces, most of the individual brick showing on the face of each brick **three** or **four** or **more** of the seven primary colors or their shades—gun-metals, wines, chocolates, browns, ox-blood reds, buff tones and multi-colors.

These brick are made of Ohio shale of the highest grade. They are thoroughly vitrified, permanent in color, standard in size—right in every characteristic.



The Seven Types of Brick in Alliance Rugs No. 76.

The seven brick above illustrated represent the seven distinct types of brick composing the panel above. Study these two illustrations—they tell of wonderful possibilities for the architect and builder.

Mr. Dealer, here is the best on the market. **Alliance Rug Brick** will get you business. If interested, write for samples, prices, etc.

THE ALLIANCE BRICK CO. Alliance, Ohio

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.
Scandinavia Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Dodge Mfg. Co.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Scandinavia Belting Co.
Weller Mfg. Co.

Blocks.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Blowers.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Link-Belt Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mc. Mfg. Co., H.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.

Buckets.
Dodge Mfg. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Gerlock, H. W.
Martin Brick Machine Mfg. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.

Clay Handling Machinery.
Clearfield Machine Shops.
Link-Belt Co.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Weller Mfg. Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
Chambers Bros. Co.
Dodge Mfg. Co.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Link-Belt Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.
Scandinavia Belting Co.

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Machy. Mfg. Co.
Sackett Screen & Chute Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Dynamos and Generators.
Westinghouse Elec. & Mfg. Co.

Electric Shovels.
Link-Belt Co.
Marion Steam Shovel Co.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Elevator Buckets.
Dodge Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Dodge Mfg. Co.
Gandy Belting Co.
Link Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Raymond Co., C. W.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Copping Bros.
Cutshall, J. M., & Carl.
Deavitt, H. M.
Dodge Mfg. Co.
Frink Pyrometer Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Eq. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
Arbuckle & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Schaffer Eng. & Eq. Co.

Fans.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filter Presses.
Baird Machine & Mfg. Co.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Fuel Economizers.
Sturtevant Co., B. F.

Gears.
Baird Machine & Mfg. Co.
Dodge Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Dodge Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Inspection Tests—Consultation.
Deavitt, H. M.

Interlocking Block.
Smith, W. W.

Insurance.
Read & Day.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Eq. Co., The
Tecktonius Mfg. Co., E. C.

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Eagle Tank Co.
Gerlock, H. W.
Tecktonius Mfg. Co., E. C.

Lime Mixer.
Gerlock, H. W.

Link Belting.
Link-Belt Co.

THE BUYERS' DIRECTORY—Continued

Locomotive Cranes.
Link-Belt Co.

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Lug (Band)
Tecktonius Mfg. Co., E. C.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Westinghouse El. & Mfg. Co.

Oil Burners.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.

Power Plant Equipment (Complete).
Dodge Mfg. Co.
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Dodge Mfg. Co.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.
Schultz & Son, A. L.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.

Quartz Glass Articles.
Englehard, Chas.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Foster Co., L. B.
Frank, M. K.
Lakewood Eng. Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Eng. Co.
Manufacturers Equipment Co.

Ratchet Wrench.
Chicago Mfg. & Dist. Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Martin Brick Mach. Mfg. Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope Preservative.
Dodge Mfg. Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Link-Belt Co
Sackett Screen & Shute Co.
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Shale Planer.
Arbuckle & Co.

Silent Chain Drives.
Link-Belt Co.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.

Steam Shovels.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Sprocket Wheels.
Link-Belt Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Tecktonius Mfg. Co., E. C.
Weller Mfg. Co.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Pettigrew Foundry Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Jackson & Church Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co., The.

Unloading Devices for Pans.
Clearfield Machine Shops.

Wagons.
Auburn Wagon Co.
Manufacturers Equipment Co.

Water Softeners.
Dodge Mfg. Co.

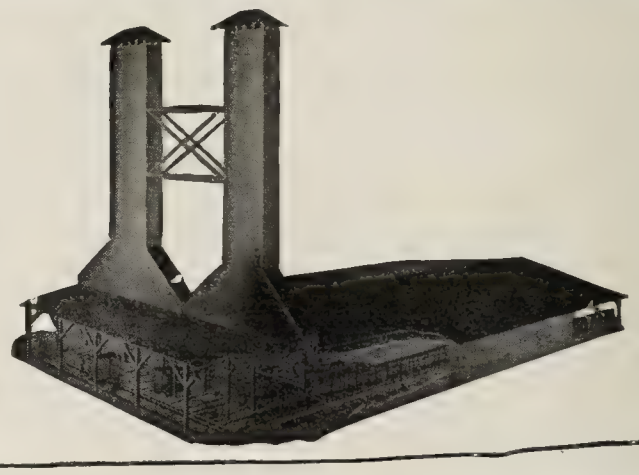
Wet Pans.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels.
Lehigh Car, Wheel & Axle Works.

Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

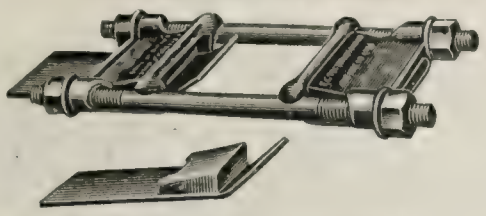


THE GUARANTY

that goes with The Standard Brick Drier is the kind of a guaranty that any fair-minded purchaser would write himself. And The Standard Drier has been making good on this guaranty for more than a quarter of a century. Brickmakers everywhere are using it. Ask **them!**

On request, we will gladly send you our catalog, containing a list of Standard Drier users. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction. Insures safety to Kiln Contents.

WROUGHT IRON BANDS

Wall and Crown Guides

Crown Covers and Ventilators

Write for Discount and Net Prices

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U. S. A.

Tecktonius-Vogt Up-and-Down Draft Round Kiln



General Traffic Association, Inc.,

Woodward Building WASHINGTON, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts.

Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

WEBB WIRE WEARS WELL

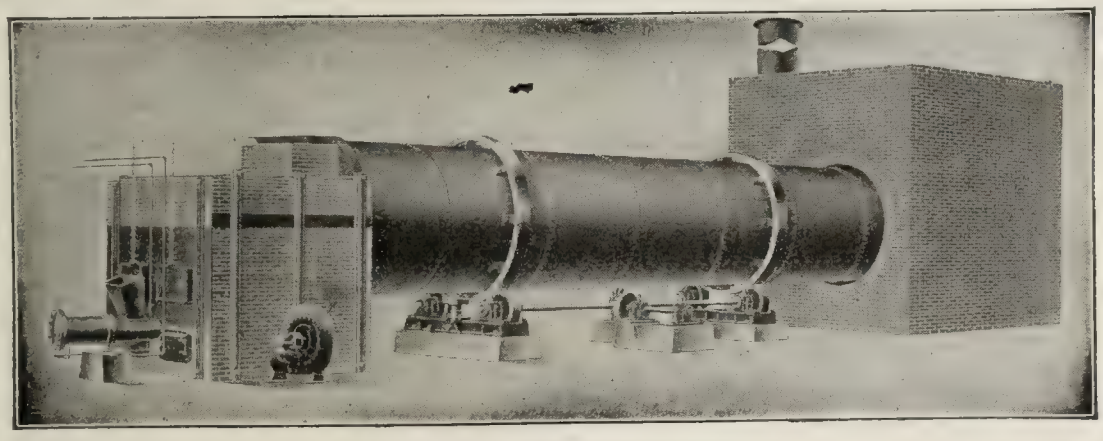
WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

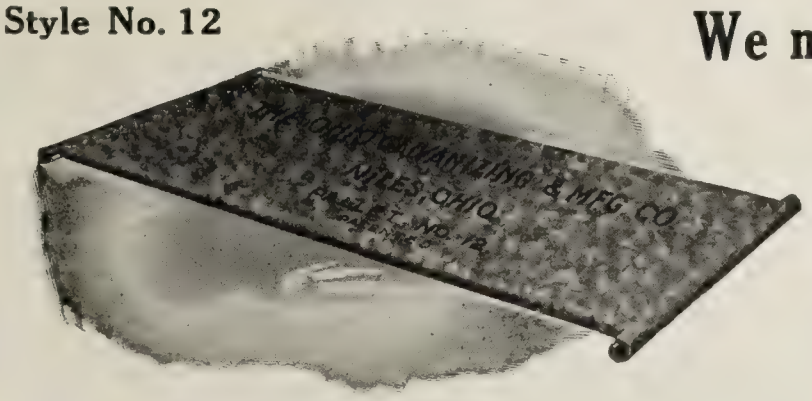
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

For the Kiln Furnace

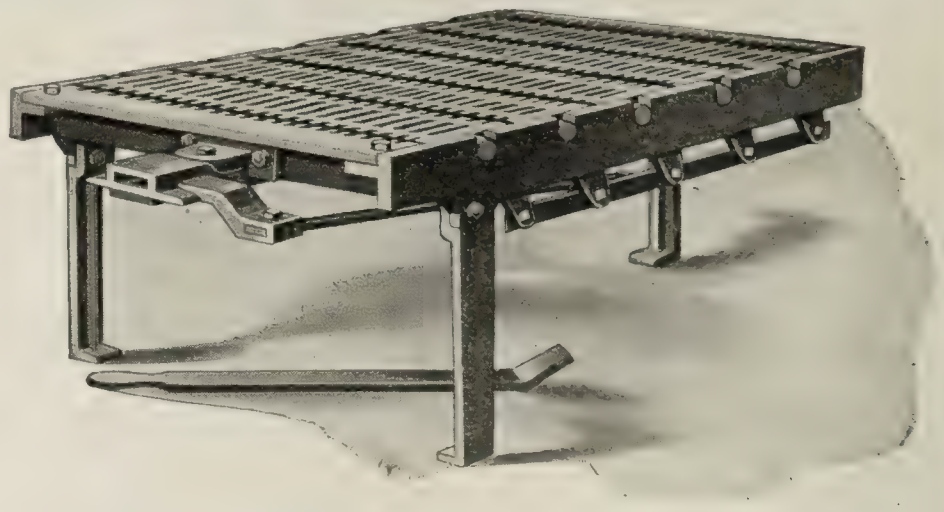
THE CANTON

Shaking and Dumping Grates

Are Sold Under an Absolute Guarantee

Convenience, Economy, Durability

are the three important features and these, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of **Canton Grates.**



The Canton is the Grate for the Plant That *Counts the Cost*

1. **Saves** from 25 to 33⅓% on **fuel,** and a proportionate amount of **labor.**
2. Absolute control of **oxidation** and **reduction.**
3. No loss of heat while stoking; no loss of fuel while shaking.
4. **Burns cheap coal.**
5. Reduces cost of upkeep of furnace brick work, **no clinkers** to stick to sides of box to be chipped loose after cooling.
6. Canton Shaking Grates have a smooth, even surface that will not warp.

We also make the *Famous Canton* Rocking and Dumping *Boiler* Grates

Office 1706 Woodland Ave., N. W.

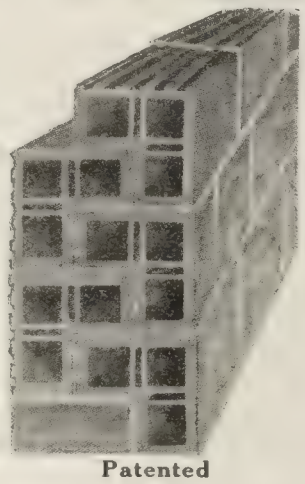
CANTON GRATE CO., Canton, Ohio

Our Mr. Elmer E. Miller will be in attendance at the N. B. M. A. Convention, Detroit, with headquarters on the 14th floor, Hotel Statler, where he will be glad to show any one interested how they can save 25% in their burning costs.

Send for Bulletin B

Made in U. S. A. **Made in Canada**

Samson Tile



Patented

Interlocking

LET "SAMSON" BE YOUR SLOGAN.

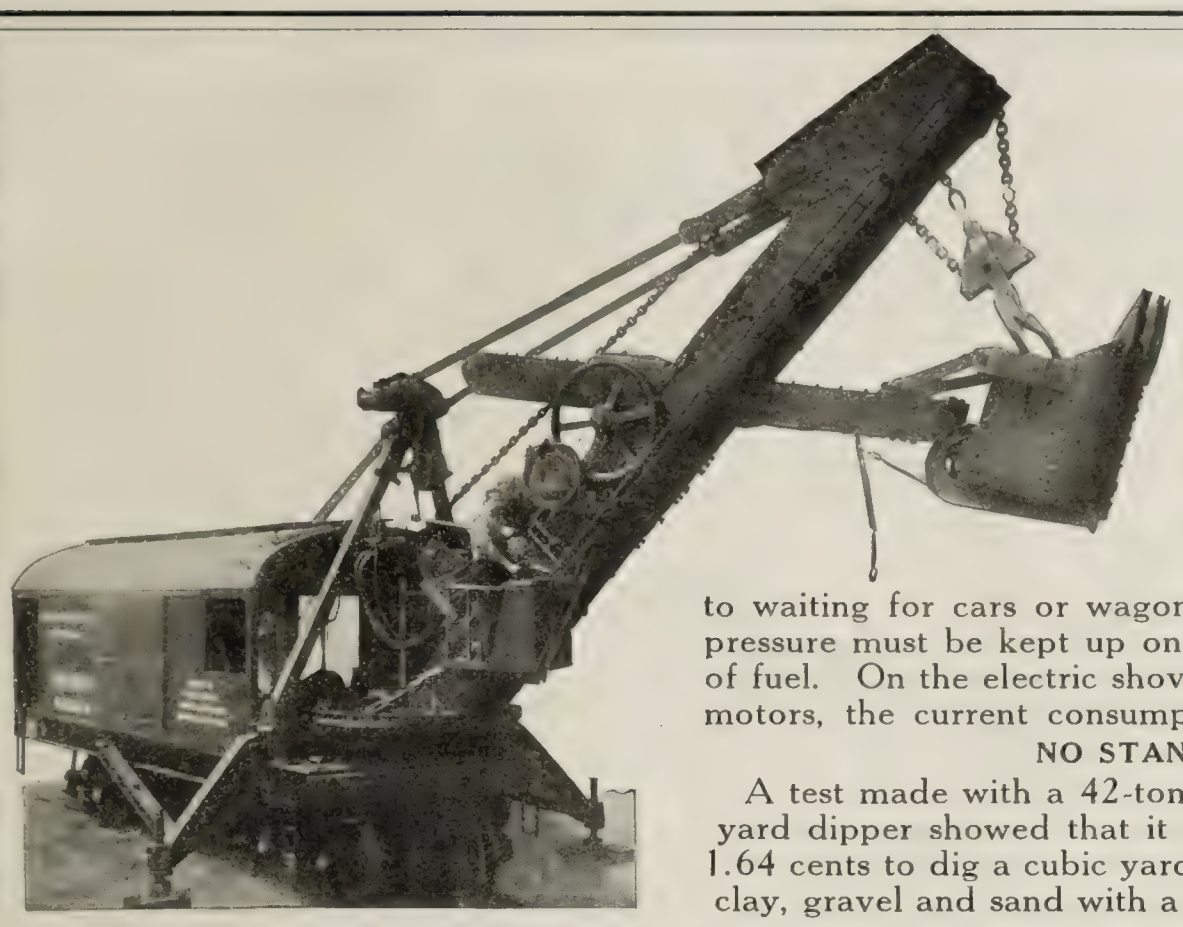
SAMSON INTERLOCKING TILE makes a house like a thermos bottle because of the horizontal dead air cells which the tile form when laid. They render a building frost-proof, fire-proof and non-conductive of moisture and sound.

Parties interested should arrange to meet me at the convention in Detroit.

Write for manufacturing rights.

W. W. Smith

Shallow Lake, Ontario, Can.



Excavating Cost Reduced by Electric Shovels

A large part of each day on shovels is spent in delays due to waiting for cars or wagons, etc. During these delays the pressure must be kept up on the steam shovel at the expense of fuel. On the electric shovel as soon as the power is off the motors, the current consumption stops. There are

NO STAND-BY LOSSES

A test made with a 42-ton shovel carrying a 1½ yard dipper showed that it cost on the average of 1.64 cents to dig a cubic yard of a mixture of sticky clay, gravel and sand with a shovel operated by

WEST NGHOUSE ELECTRIC MOTORS

while the cost with steam was from 3 to 4 cents per cubic yard.

Over 125 electric shovels driven by Westinghouse Motors in successful operation today. Write for DL 3710.

Westinghouse Electric & Mfg. Co.

Sales offices in all large American cities. East Pittsburgh, Pa.

Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

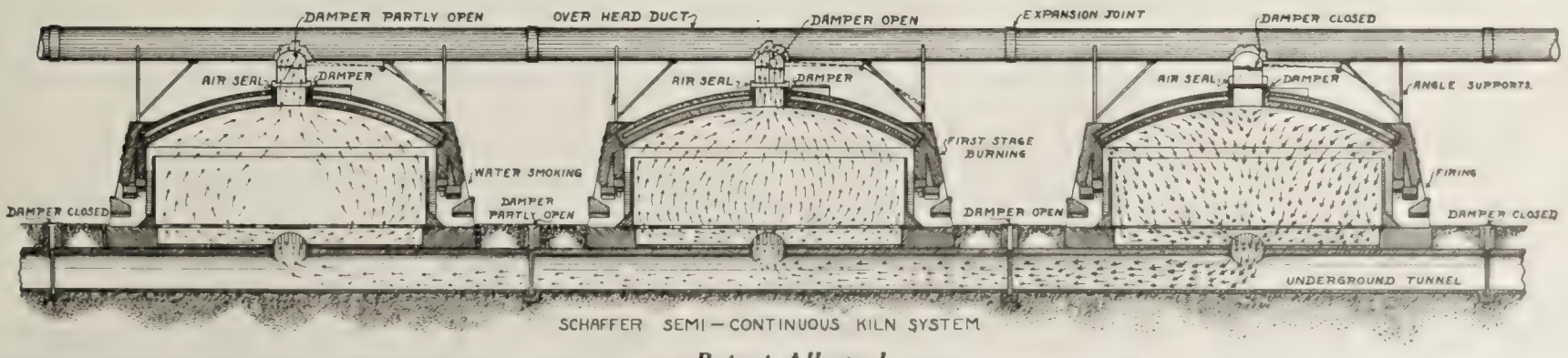
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



SCHAFFER SEMI—CONTINUOUS KILN SYSTEM

Patent Allowed



If it has to do with some plant problem, the answer will be prompt and, so far as we can make it, sensible, practical and authentic.

A corps of experts answers problems sent in by BRICK AND CLAY RECORD readers.

Use our Question and Answer Department and Save Costly Experimentation.

If your question has to do with Machinery or Equipment, write us one letter and save writing a dozen. We will forward your inquiry to the most reliable manufacturers.

Address: Service to Clayworkers Dept.

Brick and Clay Record

445 Plymouth Court, Chicago, U. S. A.

DRY YOUR BRICK WITH EXHAUST STEAM

We Prove Our Claims

By short extracts from letters received from highly pleased customers:

"We are proud of our drier and do with **exhaust steam** all that you claimed."
BRAZIL FACE BRICK CO., Brazil, Ind.

"We have had no difficulty of any kind, **no repairs,** and results even better than you promised, using **exhaust steam.**"
ROESKE BROS., Michigan City, Ind.

"Used eight years without a moment's trouble—**exhaust steam.**"
A. G. KAHN BRICK CO., Selma, Ala.

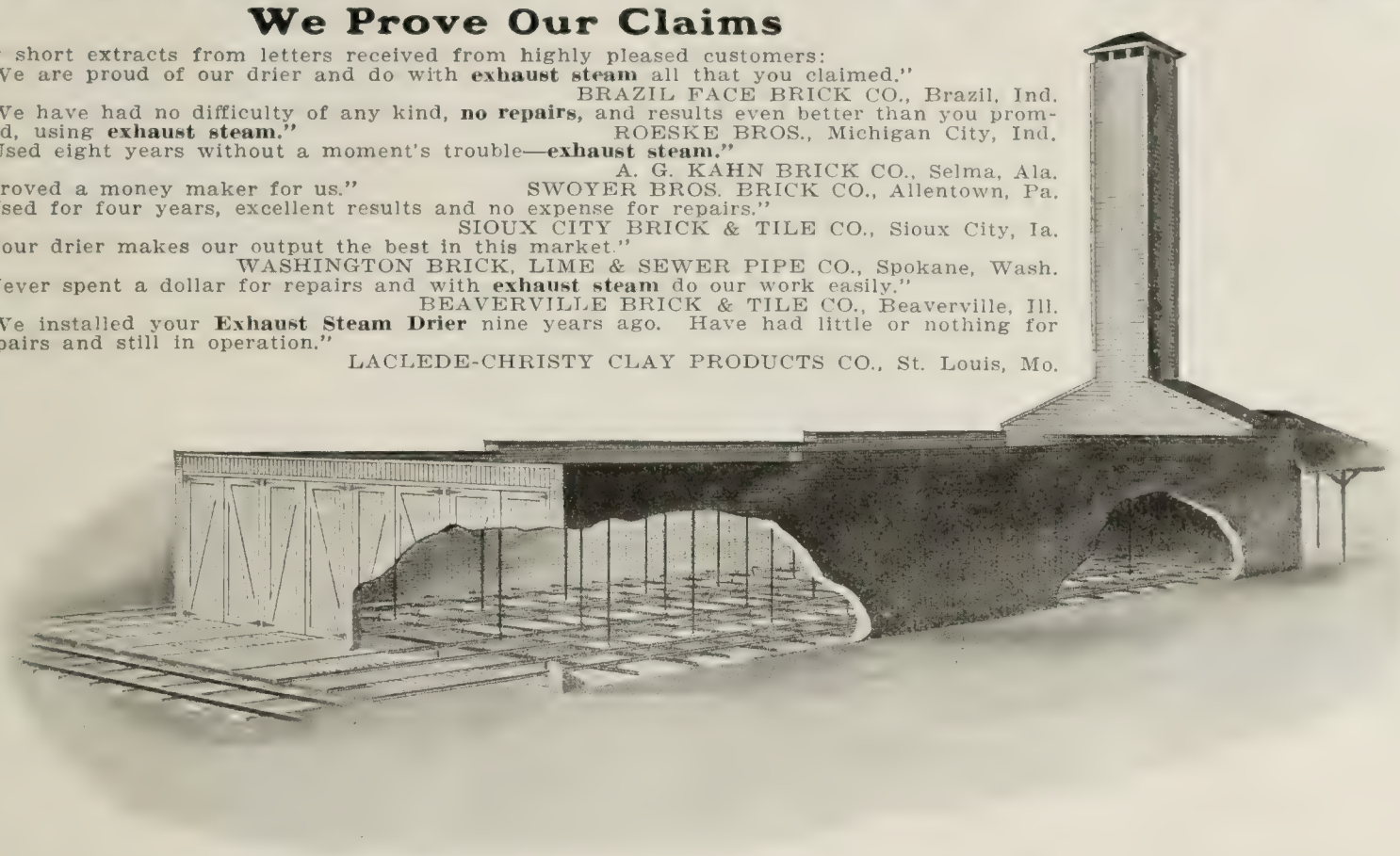
"Proved a money maker for us."
SWOYER BROS. BRICK CO., Allentown, Pa.

"Used for four years, excellent results and no expense for repairs."
SIOUX CITY BRICK & TILE CO., Sioux City, Ia.

"Your drier makes our output the best in this market."
WASHINGTON BRICK, LIME & SEWER PIPE CO., Spokane, Wash.

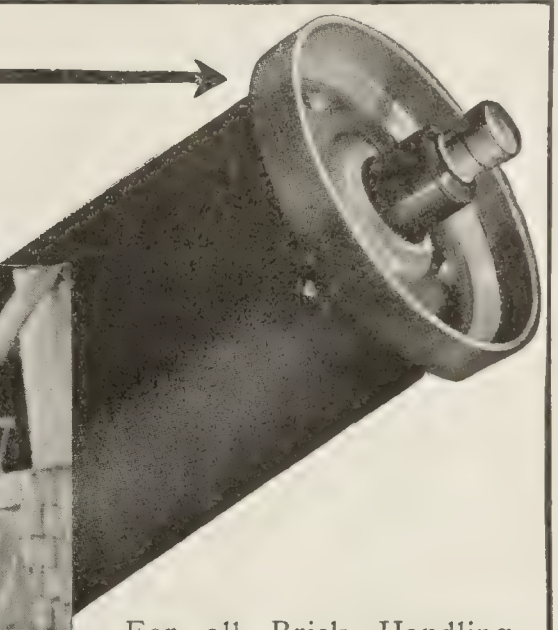
"Never spent a dollar for repairs and with **exhaust steam** do our work easily."
BEAVERVILLE BRICK & TILE CO., Beaverville, Ill.

"We installed your **Exhaust Steam Drier** nine years ago. Have had little or nothing for repairs and still in operation."
LACLEDE-CHRISTY CLAY PRODUCTS CO., St. Louis, Mo.



The National Dry Kiln Co., 1118 East Maryland St., Indianapolis, Ind.

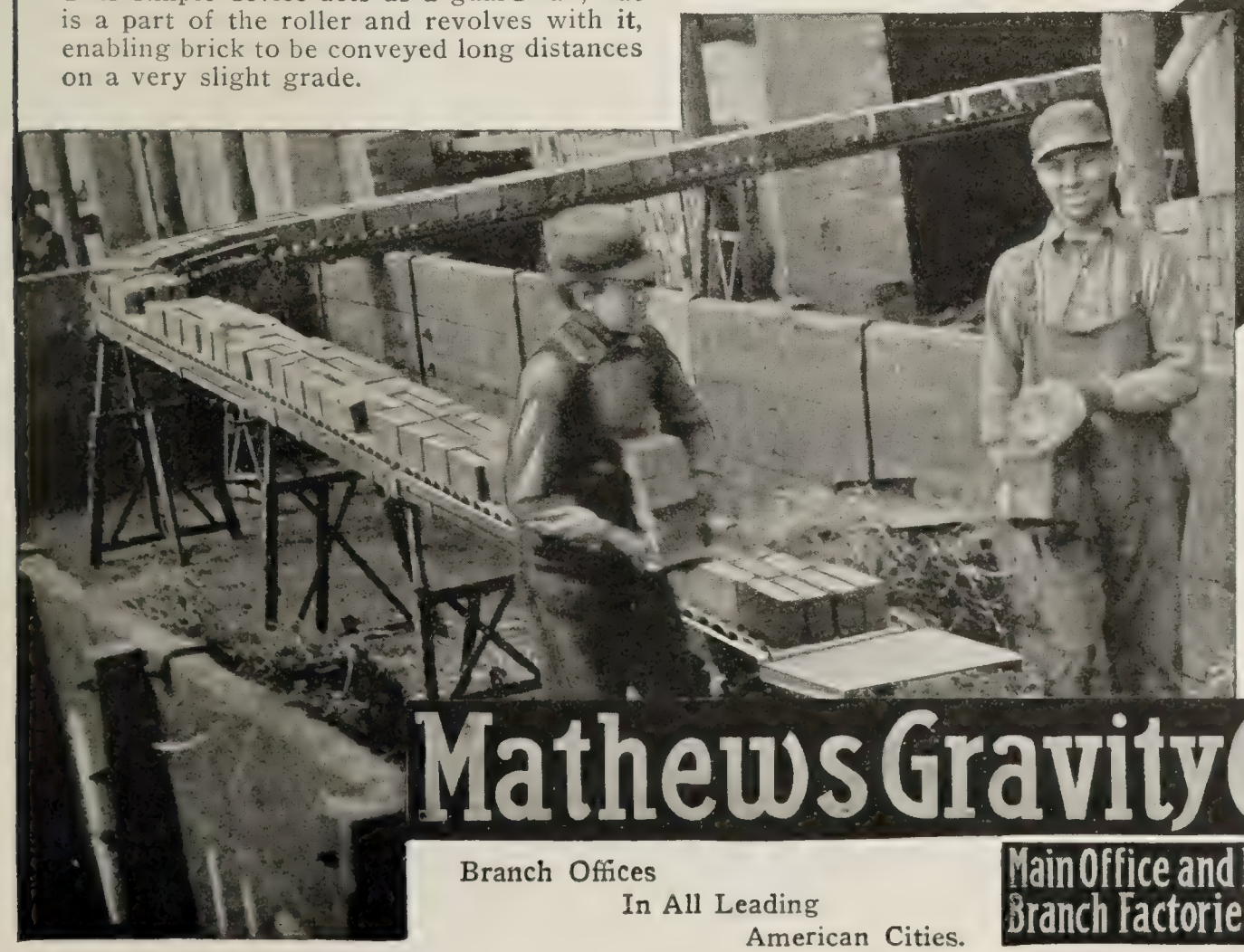
See That Flange? ⟶



That is the important Patented Feature of the

MATHEWS GRAVITY BRICK CONVEYER

This simple device acts as a guard rail, but is a part of the roller and revolves with it, enabling brick to be conveyed long distances on a very slight grade.



For all Brick Handling purposes, under all conditions, the Mathews conveyer is the only device now in successful use.

No power required.
Easy to operate.
Cheap labor employed.
Portable.
Strong and durable.

Ask for Catalog and list of users.

Mathews Gravity Carrier Co.

Branch Offices
In All Leading
American Cities.

Main Office and Factory ELLWOOD CITY, PA.
Branch Factories: TORONTO, ONT. LONDON, ENG.

You can have from us, if desired, a firm bid for the Lawson Automatic Tramway

Delivered and Erected

It is the invariable practice of other builders to make a price delivered F. O. B. cars. The cost of erection is always at the owner's risk, under per diem supervision furnished by the builders and based only on an estimate. While this is just and equitable, the average buyer nevertheless generally prefers to know absolutely what his tramway will cost him complete and ready to run. Now he can know. Why do we have this advantage?



ACROSS THE DESERT

The Ambursen Company is not a manufacturer of wire rope, but is organized as Engineer-Constructors. For ten years we have handled heavy construction amounting to many millions of dollars, in busy times having as high as 3,000 men in the field.

The officers of the Company, in various capacities, have had a construction experience of from twenty to thirty years. We are therefore familiar with every detail of construction economy and are organized and equipped to carry out work of this character on a contract basis.

There is not sufficient space in this advertisement to set forth the character of the information which must be furnished by the purchaser. All this will be brought out by correspondence. In your original inquiry merely give us general data as to length, capacity and grade of line and kind of material handled.

Bulletins A and B describing the Automatic Tramway will be sent on request and several other Bulletins are in preparation.
Very respectfully,

AMBURSEN COMPANY, (Tramway Dept.) **61 Broadway, NEW YORK**

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press	Piano Wire Screens	Wet and Dry Clay Disintegrators
Auger Brick Machines	Dry and Wet Pans	Smooth and Conical Roll Crushers
Down Delivery Tile Mills	Soft Clay Brick Machines	Trucks and Barrows
Oil Burning Equipment	Pug Mills	Kiln Fittings
Crude Oil Engines	Wood Moulds	

If you are in the market for any of the above we will be pleased to quote you.

Catalogs Upon Request

CHICAGO BRICK MACHINERY CO.
20 W. Jackson Boulevard CHICAGO, ILL.

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Keim Brick & Tile Co.	Louisville	Ohio
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works.	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool .....
United States Roofing Tile Co... Parkersburg ..... W. Va.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Keller Brick Co., The, Cuyahoga Falls, O..... 13

BRICK (COMMON)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton Ill..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Metropolitan Paving Brick Co., Canton, O..... 10

BRICK (FACE)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
American Enamel Brick & Tile Co., New York, N.Y..... 13
Bradford Pressed Brick. Co., Bradford, Pa..... 13
Gethmann Brick Co., Gladbrook, Ia..... 13
Hocking Valley Pro. Co., Columbus, O..... 11
Hydraulic Press Brick Co., St. Louis, Mo..... 13
McArthur Brick Co., McArthur, O..... 12
Ironclay Brick Co., Columbus, O..... 12
Keim Brick & Tile Co., Louisville, O..... 15
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Kimbell Brick Co., S. S., Chicago,Ill..... 13

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill..... 6
Brighton Fire Brick Co., New Brighton, Pa..... 6
Chicago Retort & Fire Brick Co., Chicago, Ill..... 4
Davis Fire Brick Co., Oak Hill, O..... 4
Dover Fire Brick Co., Cleveland, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6
Maurer & Son, H., New York City..... 4
Mexico Brick & Fire Clay Co., Mexico Mo..... 6
Queens Run Fire Brick Co., Lock Haven, Pa..... 4
Jos. Soisson Fire Brick Co., Bolivar, Pa..... 4
Southern Fire Brick & Clay Co., Chicago..... 12

BRICK OR BLOCK (PAVING)
Albion Shale Bk. Co., Albion, Ill..... 8
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Barr Clay Co., Streator, Ill..... 6
Bessemer Limestone Co., Youngstown, O..... 8
Big Four Clay Co., Canton, O..... 8
Carlyle Paving Brick Co., Portsmouth, O..... 10
Clinton Paving Bk. Co., Clinton, Ind..... 8
Danville Brick Co., Danville, Ill..... 10
Deckman-Duty Brick Co., Cleveland, O..... 8
Dunn Wire Cut Lug Brick Co., Conneaut, O..... 7
Hamburg Vit. Brick Co., Philadelphia, Pa..... 10
Harris Brick Co., Cincinnati, O..... 8
Hocking Valley Brick Co., Columbus O..... 10
Mayer Brick Co., C. P., Bridgeport, Pa..... 10
Metropolitan Paving Brick Co., Canton, O..... 10
Murphysboro Paving Brick Co., Murphysboro, Ill..... 6
Nelsonville Brick Co., Nelsonville, O..... 8
Purington Paving Brick Co., Galesburg, Ill..... 10
Shawmut Paving Brick Co., Shawmut Pa..... 10
Sterling Brick Co., Olean, N. Y..... 6
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 11
United Brick Co., Conneaut, O..... 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa..... 6

DEALERS
American Clay & Cement Corp., Rochester, N. Y..... 13
Bonner & Marshall Brick Co., Chicago, Ill..... 15
Kimbell Brick Co., S. S., Chicago, Ill..... 13
Globe Brick Co., East Liverpool, O..... 12

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O..... 10

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill..... 13

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa..... 6
Davis Fire Brick Co., Oak Hill, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (ROOFING)
National Roofing Tile Co., Lima, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, Connellsville, Pa. *Sales Office,* Bolivar, Pa.

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

Fire Brick for all types of kilns.

For burning all kinds Clay Products.

***For* Side Walls**
***For* Crowns**
***For* Fire Arches**
***For* Perforated Bottoms**

Consult us when in market.
We are ready to serve you.

DAVIS FIRE BRICK CO.

OAK HILL, OHIO

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press. Bk. Co., Indianapolis.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

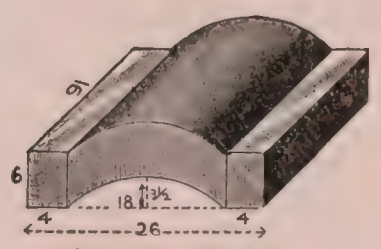
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

The Permanent Way



Permanent if Properly Cared For.
Durable Under any Conditions.
Brick in Pavements is the Most Durable of all Manufactured Materials.
Wire-Cut-Lug Brick is the Most Durable Type of Paving Brick.
Manufactured by 26 Competing Companies operating 42 Plants.

Write to

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

(*Licensors*)

Headquarters of the Company's Representatives at the Brick Manufacturers' Convention, at Detroit, February 15th-20th, Parlor Suite 236 and 238, Hotel Statler.

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire-Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

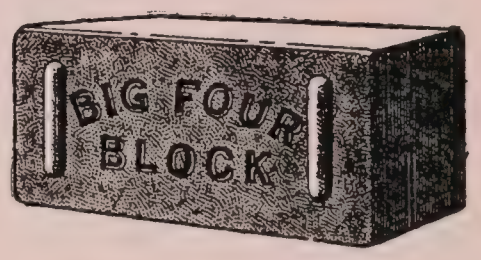
CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

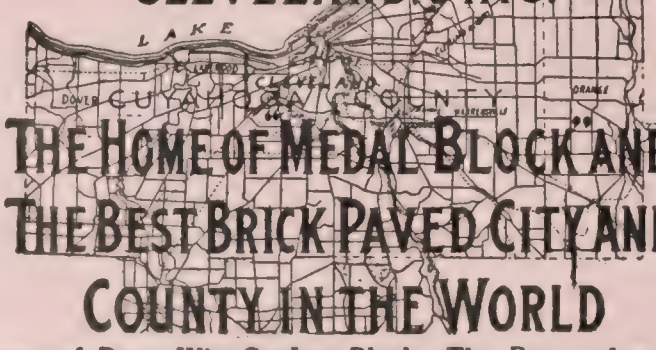
A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO

CLEVELAND OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

Ironstone Block

"Often Rattled But Never Embarrassed"

Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.

Terre Haute, Ind.



Notice to Manufacturers and Agents

Our Rug texture brick are manufactured under U. S. and Canadian Patents and it is our intention to prosecute all infringements. At the present time there are many imitations being manufactured and suit is now pending against one of the infringing companies.

We beg to notify you that it may be necessary for our further protection to make sellers and users of these imitations, as well as manufacturers, party to suits.

HOCKING VALLEY PRODUCTS COMPANY

Columbus, Ohio

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick

Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick

Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick

Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost — see Prices Quoted in this Advertisement.

Build with Brick

Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

The Ironclay
FIRE-FLASHED BRICK
VITREOUS
SELF-CLEANING
It washes its own face.

The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick
BELDEN BRICK CO.-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

For sale by

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

L. D. BINYON
President

H. L. MATZ
Vice-President

JAS. A. HOGAN
Sec'y and Treas.

S S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

"AMERICAN"
ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

GETHMANN BRICK CO.

Makers of Standard Dry Pressed Face Brick, red in color, both square and round edge.

Also dark colored glazed Face brick.

Samples sent prepaid on request.

GLADBROOK, :: :: IOWA

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

Official Directory of
Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—C. A. Millar, Pres., Toronto, Can.; Gordon C. Keith, Toronto, Can.

American Ceramic Society—C. W. Parmelee, B. S., Pres., New Brunswick, N. J.; Edward Orton, Jr., E. M., Sec'y, Columbus, Ohio.

American Face Brick Association—Harold W. Holmes, Pres., Detroit, Mich.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; Charles T. Harris, Sec., Cleveland, Ohio.

Illinois Clay Manufacturers' Association—J. L. Buckley, Pres., Aledo, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—Eben Rodgers, Pres., Alton, Ill.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—T. B. Martin, Pres., Minneapolis, Minn.; L. G. Rose, Sec'y-Treas., Minneapolis, Minn.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—P. C. G. Gosser, Pres., Coshocton, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, O.

Western Ontario Clayworkers' Association—Alfred Wehlan, Sec'y, Cario, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—A. W. Hilker, Racine, Wis.; Prof. Samuel Weidman, Vice-Pres. and Sec'y, Madison, Wis.

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: **Louisville, O.**

Factory: **Mapleton, O.**

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

The United States Roofing Tile Co.

ROOFING TILES

Promenade and Floor Tiles

Pure SHALE products of superior quality and patterns.

Two Factories—Prompt Deliveries

GENERAL OFFICE
PARKERSBURG - WEST VIRGINIA

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—

Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

ROMACO MORTAR COLORS
ROMACO STUCCO RETARDER

Always Uniform
Strong and Reliable

Manufactured by
THE ROLL MANUFACTURING CO.,
CLEVELAND, O.

POSTERETTES



The best, brightest, most attractive poster stamp that has so far been issued.

It carries the "Build with Brick" slogan everywhere your mail or express packages meet the eye of a prospective builder.

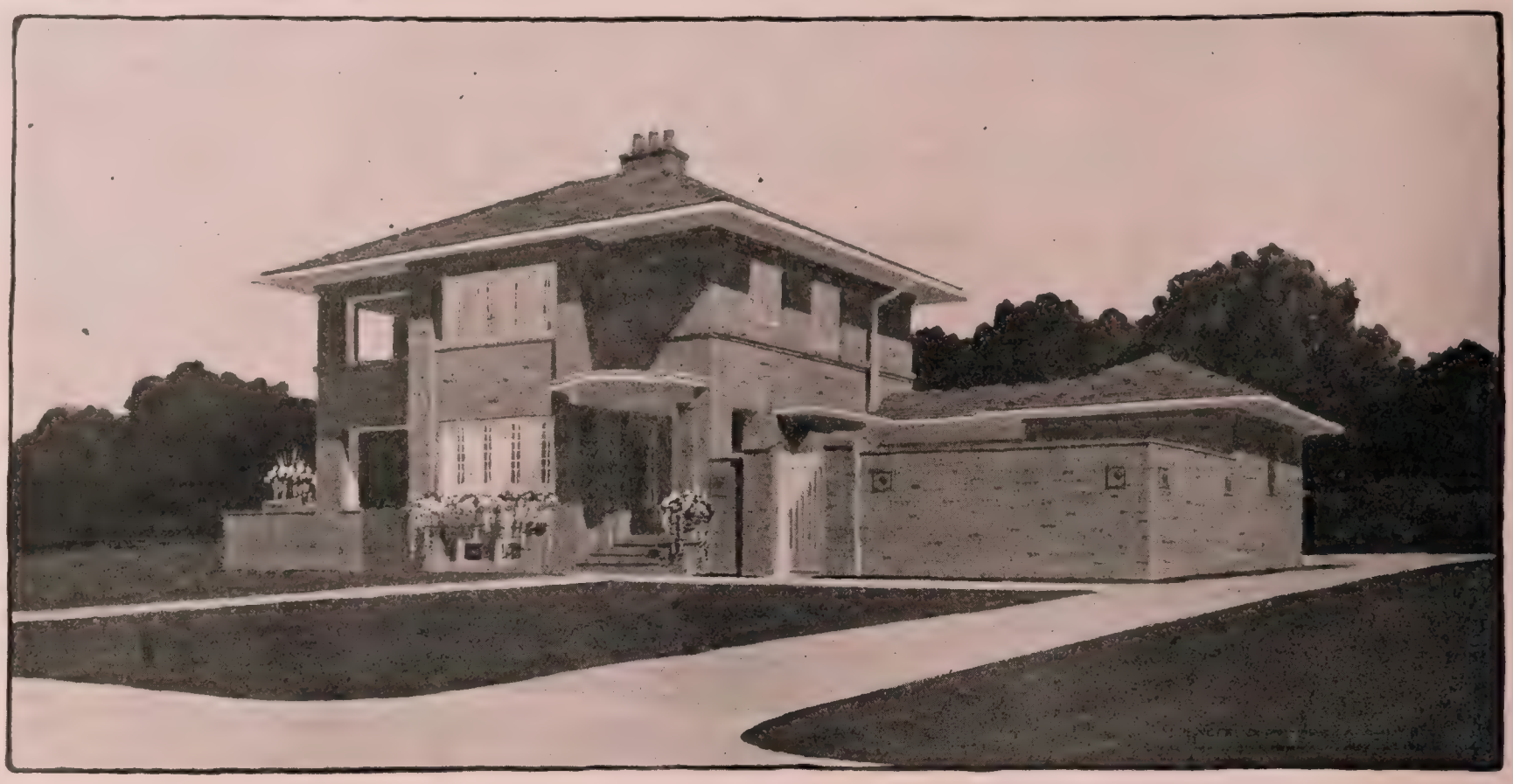
Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO



Do You Want to Know What this House Would Cost Built in Your Own Town?

IF YOU ARE A SUBSCRIBER to the Panama-Pacific Clay Products Association, plans and specifications of this house will be sent you, on your assurance that you will secure a bona-fide bid on the house, without the garage, from some reputable contractor.

This bid will be used for purposes of comparison with bids received from other cities, and form a basis for newspaper articles that will show the real cost of building in brick.

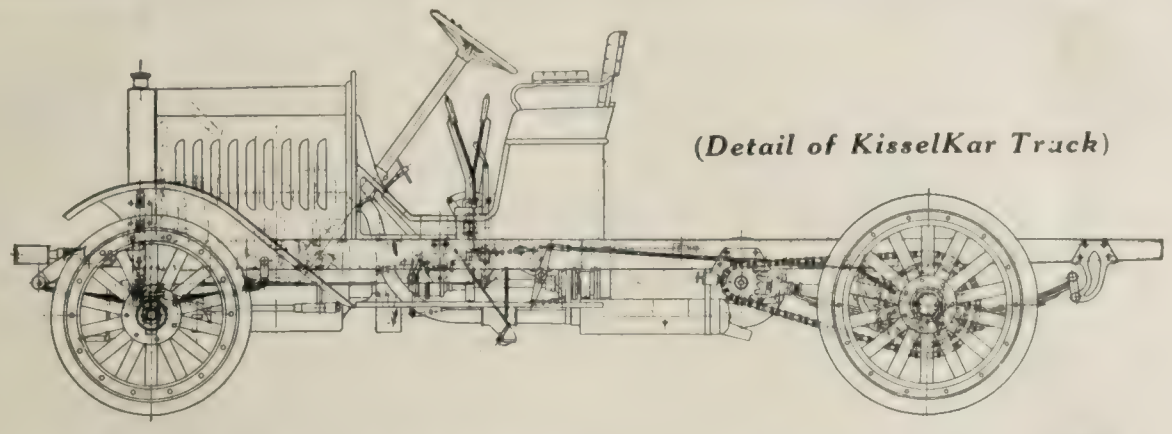
THE NAME OF THE CONTRACTOR that you select will be published in the literature that will be distributed at the San Francisco Exposition. He must make his bid on standard forms that will be furnished by the association.

Additional sets of plans and specifications will be furnished, in case it is desired to take competitive bids. Arrangements for these may be made with the Secretary.

You Must Be a Subscriber if You Want Your Contractors to Figure

Make Checks payable to CHARLES BONNER, Treasurer, and mail to Room 1205 Chamber of Commerce, Chicago

Panama-Pacific Clay Products Association
CHICAGO



(Detail of KisselKar Truck)

Let KisselKar Truck Owners Tell You Their Story

If you are going to buy a truck, the place to look for information **is among present owners.**

Find out what KisselKar Trucks have done for men in **your line of business.** The Kissel Motor Car Company will be glad to give you the names.

See them or, if at a distance, write them. They will tell you just how sturdy and dependable KisselKar Trucks are and what you can expect them to accomplish.

KISSELKAR TRUCKS

are used to advantage in two hundred lines of business. **In many cases they have paid for themselves the first year.**

There are six sizes of KisselKar Trucks—1500 lbs. 1, 1½, 2½, 3½ and 6 tons carrying capacity. Special bodies can be built for any requirement.

Send for illustrated truck portfolio—tersely in words, graphically in pictures.

Kissel Motor Car Company,

568 Kissel Avenue, Hartford, Wisconsin

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Baltimore, Pittsburgh, Cleveland, San Francisco, Detroit, Los Angeles, Seattle, Buffalo, Rochester, Columbus and 300 other principal points.

The Crowding Motion And The Full Circle Swing

Are Distinctive Features of **Thew Automatic Shovels**

Enabling them to handle either shallow or deep cuts successfully and economically and furnishing a prying motion that is particularly effective in shales and fireclay.

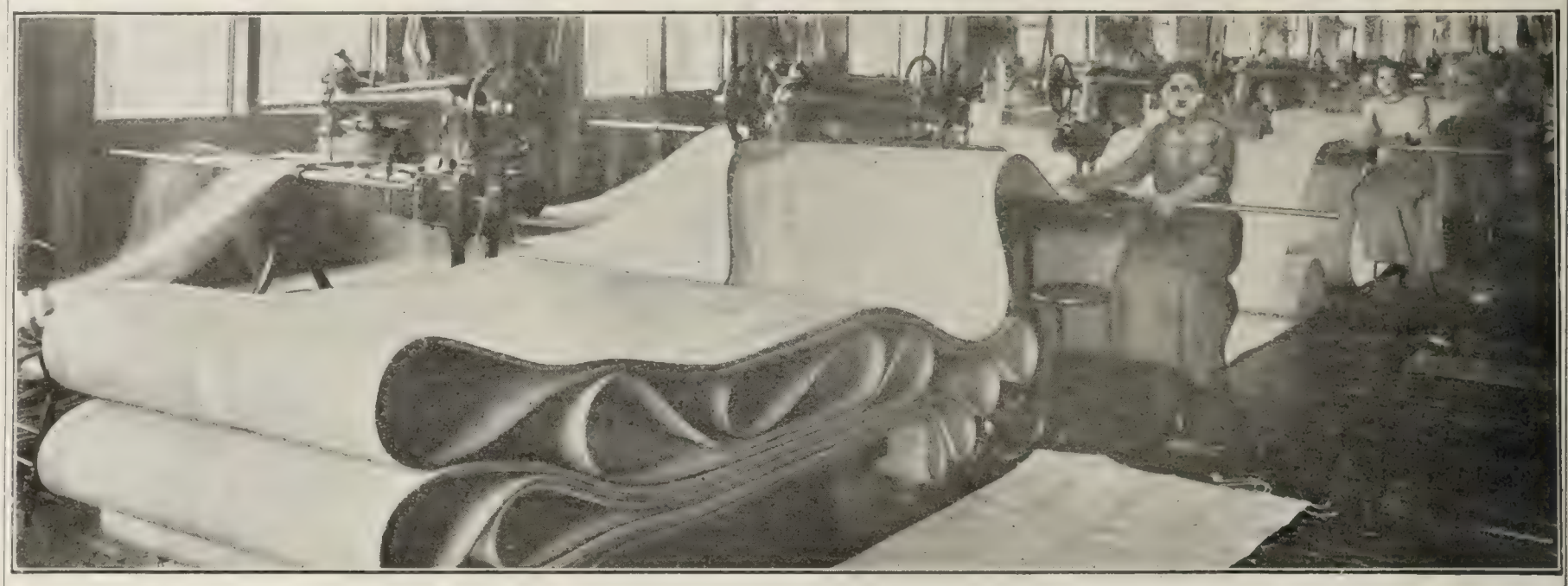


Are Cost-Saving Features That Make **Thew Automatic Shovels**

The standard for brick yards. **300 Brick Manufacturers** are now using Thew Shovels and will gladly tell you what they are saving with their Thews. Write for Catalogue A and list of Thew Owners near you.

The Thew Automatic Shovel Co., Lorain, Ohio

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

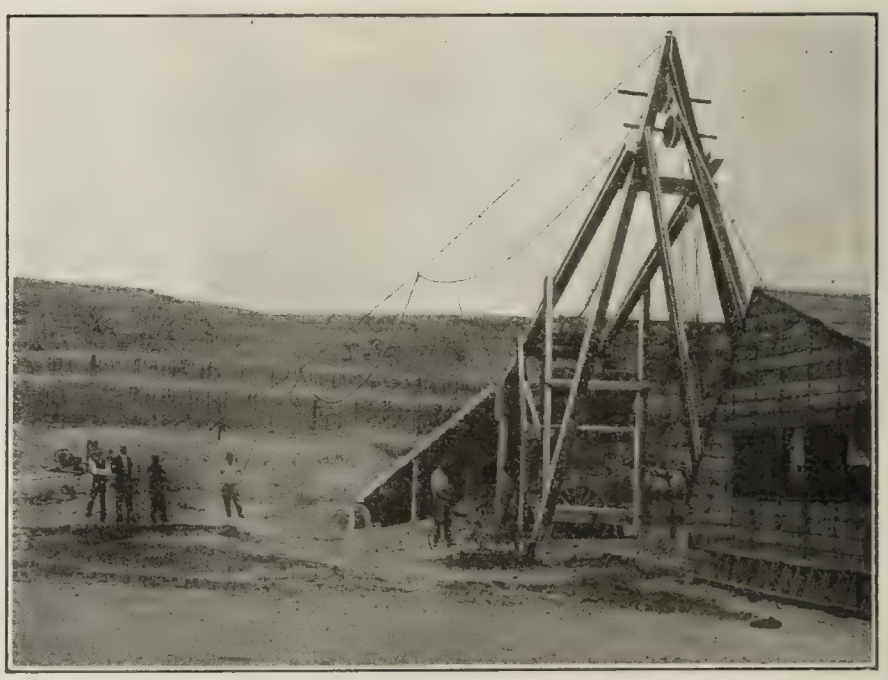
THE SAWYER BELTING COMPANY, Cleveland, O.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.
Office and Works: Macon, Georgia

In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

"A Man With a Message"
For the Brickman

By this title was Floyd E. Waite heralded after his address at the joint convention of Face Brick Manufacturers and Dealers, held at French Lick, Dec. 8th, 9th and 10th.

Mr. Waite did not appear to the Clay-workers as a "wrecker," but as a "Builder." His talk was constructive.

Not only were the weaknesses and the mistakes in the business of promoting fire resisting materials pointed out—a remedy was offered. And it is a perfectly practical, within-your-reach remedy, too.

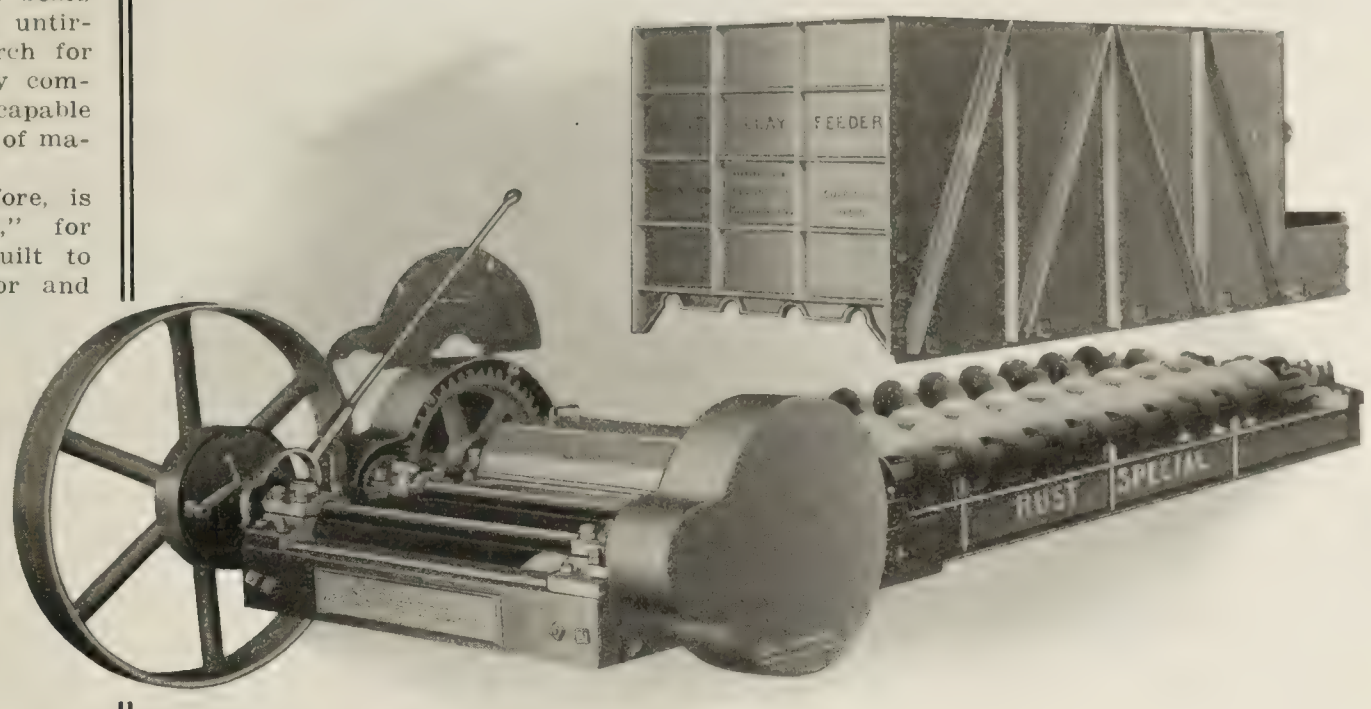
A printed copy of this address FREE if you write for it. Read this vital message. It's YOUR business.

Society Advocating Fire Elimination

R. P. STODDARD, *Secretary*

340 Leader-News Bldg. CLEVELAND, OHIO

The New Rust Special is a Big Producer



By taking all the dry pan production and feeding it evenly into the pug mill and as fast as is required to get full capacity—

By insuring even-tempering of the clay—

By keeping the flow of clay through the die continuous—

By making the work of the off-bearers a uniform action, without skip or break—

The New Rust Special—the latest thing in these wonderful plant speeders—makes an uncertain plant a Big Producer.

It Cuts Out the Labor of Two Men—

And then—in addition to this speed-up insurance and the improved product that comes with uniformity in feeding, there is the labor-saving, for each Rust Special cuts out two men—or $1,350 per year in wages, if you pay this help $2.25 per day.

Send for FREE Marion Book and Get the Facts

There is a Marion Book or Bulletin for every product that bears the Marion name and copies are FREE to all who wish them.

These Marion Books do not deal in generalities—they tell FACTS. Every statement of claim is backed up by PROOF—the evidence of satisfied clayworkers.

We have booklets as listed below. Send for the one you want.

Rust Clay Feeders.
Shear-Klean Grates.
Rotary Soot Blower.
Brick and Tile Machines.
Winding Drums.
Atlas Car Movers.

P. O. Box 395

The Marion Machine, Foundry and Supply Co.

Marion, Indiana

The Marion Line

Every machine or device that bears the "Marion" name represents untiring labor and ceaseless research for correct and scientific design by competent engineers—the skill of capable machinists—the highest quality of material.

The completed product, therefore, is synonymous with "Efficiency," for each device or machine is built to eliminate waste in time, labor and raw material.

The "Shear-Klean" Grate

This "Marion" Grate burns low-grade "clinkering" coal—slack and screenings, and does it so effectively a full day's run is assured without cleaning through the fire doors.

The fireman handles and controls his fires without the use of slice bar or poker.

The "Shear-Klean" Grate is a great fuel-saver, and every clayworker ought to have the "Shear-Klean" Grate Book that tells all about it.

The "Marion" Winding Drum

These are of the self-continued friction type. One lever operates the friction pulley and the brake which keeps the car—loaded or unloaded, under perfect control of the operator.

There are several types and sizes of the "Marion" Winding Drum—each of which is described in the Marion Booklet.

The "Marion" Rotary Soot Blower

This is a device to be permanently attached to the rear wall of your boiler—opposite the center of the flue space. It prolongs the life of the boiler—makes flue cleaning a pleasure instead of a drudge and absolutely keeps the flues free from soot.

The Marion Booklet tells how others have used this device with profit.

The "Marion" Brick and Tile Machines

This line embraces six machines—each designed to give the maximum of efficiency at the minimum of cost. They are made with the upright puggers and with the square hoppers, and their capacity runs from 12,000 brick or 5,000 to 8,000 three-inch tile, to 100,000 brick per day of ten hours. The "Marion" Eli Booklet describes these machines.

Other "Marion" Products

All the "Marion" products are described in the General Catalogue of the "Marion" Line—a copy of which is yours for the asking.



THE HOLLOW-TILE HOUSE

By FREDERICK SQUIRES

is a book every prospective home-builder should have. No amount of planning, however extensive, for that new home is complete without considering this new type of building material made from burned clay.

TABLE OF CONTENTS

INTRODUCTION

Chapter I..... Tile-Making
Chapter II.....Old World Stucco
Chapter III.....About Construction
Chapter IV.....Counting the Cost
Chapter V.....The History of the Use of Hollow-Tile for Houses
Chapter VI.....Architects' Tile Houses
Chapter VII.....Building the Other Man's House
Chapter VIII.....Floor Building, Sand Moulds, The T-Beam
Chapter IX.....Tile in Stucco Surfaces
Chapter X.....Tricks of the Trade
Chapter XI.....Tile and Concrete
Chapter XII.....Texture and Scale
Chapter XIII.....The Flat-Roofed House
Chapter XIV.....An Interesting Experiment
Chapter XV.....The House of Three Inventions

This book has 210 pages containing 215 illustrations and figures.

And even if you are living in a perfectly good house and don't intend to build for some time to come, GET THE BOOK ANYWAY, because you will find between its covers a story with just a touch of the romantic about it in the history of hollow tile and the hollow tile house with its European ancestry. It will make good reading for a quiet hour.

But don't treat this matter like the man to whom you have loaned five dollars, treats you. He's always putting you off. The longer you do without this book, the longer you remain in the darkness about a subject you should know all about. DON'T wait until tomorrow. Send in your order TODAY.

Price $2.50 Net

BRICK AND CLAY RECORD

CHICAGO

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany all orders.

WANTED—HELP.

WANTED—Superintendent for sewer pipe plant, operating Western Canada. Must be adaptable, able to assume control and show results. Splendid opportunity for young man to grow with plant. In your application state fully why you know you can handle job. Address: Glazed, 827 Union Bank Bldg., Winnipeg, Canada. 2-2-2P.

WANTED—Capable and experienced brick salesman to take charge of excellent territory. Address, giving age, experience and salary expected, 2-BO, care of "Brick and Clay Record." 2-2-1.

WANTED — Experienced superintendent for sand-mold brick plant in Wisconsin. Address: The Excelsior Brick Co., Menomonie, Wis. 12-2-3P.

WANTED—POSITIONS.

POSITION WANTED—Gentleman now occupying position as general manager and sales manager of modern brick and hollow tile plant, is desirous of securing similar position, particularly general sales manager, on the Pacific Coast, California preferred. Unexceptional qualifications, business ability and personal references unquestionably satisfactory. Must be a good going concern. Address: 1-C, care of "Brick and Clay Record." 1-4.

WANTED—Position with first-class company by a Ceramic Engineer, thoroughly acquainted with stiff-mud brick (building and pavers) from pit through factory, kilns and on to cars. Married man, best of references, of wide experience. Address: 2-BB, care of "Brick and Clay Record." 2-2-1P.

WANTED—By capable, experienced man, now engaged, position as superintendent of brick plant. Pacific Coast preferred. References. Address: 1-X, care of "Brick and Clay Record." 1-TF.

THOROUGH EXPERT—Of clay manufacturing line, wants position. Has good references and will accept reasonable salary. Address: 2-BE, care of "Brick and Clay Record." 2-2-1P.

WANTED—Position as superintendent or burner by practical man. Can burn with coal, gas or oil; common brick, press or paving brick. Best of references. Address: 2-BA, care of "Brick and Clay Record." 2-2-1P.

WANTED—Position as manager or superintendent of clay plant, Ceramic engineer, thoroughly experienced. Paving or face brick preferred. Best references. Address: 2-L, care of "Brick and Clay Record". 2-1P

WANTED—Position with paving brick company. Man capable of marketing and manufacturing. Thorough, practical experience in all branches, including burning. Strictly sober. Gilt edge reference. Address: 2-G, care of "Brick and Clay Record". 2-1P

WANTED—Position by first-class superintendent with 20 years' practical and theoretical experience, to take complete charge of up-to-date brick and fire brick plant. Thoroughly competent and reliable. A-1 references. Address: 2-A, care of "Brick and Clay Record". 2-1

POSITION WANTED—Man of Norwegian birth, 42 years old, strictly temperate, wants position with roofing tile, drain tile, fire brick, paving brick or common brick concern. Has had three years' experience in Norway as superintendent, and has also served as superintendent for a number of years in United States. Technical education received in Lrubein, Germany, in civil engineering and ceramics. For 15 years has been associated with clay industry and has had wide experience in the construction and operation of down-draft and continuous kilns. Address: 2-C, care of "Brick and Clay Record". 2-1

WANTED

WANTED—To hear from owner of good brick or tile plant. Send price and particulars. D. F. Bush, Minneapolis, Minn. 2-2-1P.

FOR SALE—KAOLIN.

FOR SALE

KAOLIN

Ninety acres of it—15 ft. deep, underlayed by 6 ft. of No. 1 Fire Clay. Sixteen miles from Spokane, Washington.

Address: Wm. R. Steinberg.

1418 Republic Bldg.,

Chicago, Ill.

3-2-1P.

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—The Ashaway National Bank will sell a controlling interest in the capital stock of the Ashaway Clay Co. for a nominal sum. The plant was built in 1907 and cost about $70,000. On account of lack of experience and capital, it has never run, all told, a full year. The company has just been reorganized with a capital of $35,000 and no debt. It is a thoroughly modern and up-to-date plant with new equipment throughout, consisting of Freese intermediate size brick machine, capacity up to 60,000 brick per day, disintegrator for preparing the clay, Corliss engine with high pressure boilers, waste heat dryer, direct connecting fan and steam coils for auxiliary heater, 25-chamber Haigh continuous kiln with stack 135 ft. in height. The equipment for handling clay from the bank consists of tramway and cars with elevated track at plant and winding drum to hoist cars. There is a switch into the plant with depressed track for loading. Ashaway National Bank, Ashaway, R. I. 1-3.

(SEE NEXT PAGE FOR SPECIAL INVESTMENT OPPORTUNITIES.)

FOR SALE—Whole or half interest, Raymond stiff-mud 20,000 capacity brick plant, located in growing town, three railroads. Shale supply unlimited, making fine red builders, face and pavers. Good local and shipping market. Owners not brick men and in other business. Bargain for right man. Address: Daniel Troy, 245 So. 4th St., Raton, N. M. 2-2P

BIG BARGAIN—Brick and tile plant, Oberlin, O., 30,000 capacity mill, Bensing automatic brick and tile cutter, gas engine and gas well, 3-story building, 30x60; 28 ft. kiln, all in good condition. Large home demand for brick and tile. It will bear investigating. J. N. Stone, Treas., Oberlin, O. 2-1

FOR SALE—Entire tile plant, everything good condition. Drying capacity 100,000 tile. Cannot supply demand. Address: Paulding Clay Works, Paulding, Ohio. 1-2-3P

FOR SALE—Land and improvements and machinery of the Loogootee Glass Sand Co., at Loogootee, Ind. For particulars address: Loogootee Glass Sand Co., Louisville, Ky. 2-2-2P.

FOR SALE—Stiff-mud brick plant, 40,000 capacity, at a bargain. Near Eufaula, Ala., on the Georgia side of the river. Plenty of clay. A. J. Baldwin, Dawson, Ga. 2-2.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

FOR SALE—Practically new: brick and tile machinery, boilers, engine; Standard steam dryer, and cars. Address: W. E. Lyon & Co., Carthage, Ill. 2-2-TF

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo. 3-1tf.

FOR SALE VERY CHEAP—About 15,000 wooden pallets; in good condition. Address: 2-B, care of "Brick and Clay Record". 2-2

FOR SALE—25 H.P. steam engine, Fate brick and tile machine, 2-roll clay crusher, hand power brick cutting table. A. F. Potter, Clintonville, O. 2-2

FOR SALE—One 5-B Madden brick and tile machine, in first-class shape. Clay Products Co., Earl Park, Ind. 2-2

FOR SALE—The Portsmouth Engine Co. has two Standard paving brick rattlers which they will sell for $75.00 each, or one-half regular price. New and first-class in every respect. The Portsmouth Engine Co., Portsmouth, Ohio. 2-2-1.

BARGAIN—Brewer machine, 30,000 daily capacity, full set brick and partition tile dies; 12 ft. pugmill; 600 ft. cable conveyor; Bensing automatic cutting table; 60 h. p. engine and boiler; 10 and 18 h. p. gasoline engines. Farmers Clay Products Co., Minneapolis, Minn. 2-2-1.

FOR SALE—One standard Bensing automatic tile cutter in perfect condition. One 15 in. Potts disintegrator, one 50 h. p. motor. The Mamer Brick Co., Benton Harbor, Mich. 2-2-1.

FOR SALE—One carload wooden pallets in good condition, $3.00 per thousand. One 60 h. p. stationary engine, in good order, price $150. J. M. Ault, Wyoming, Ill. 2-2-1.

Brick and Clay Record Classified Ads Are Result Producers

BARGAIN FOR QUICK SALE.

Following machinery and equipment now installed at plant located on outskirts of Prescott, Ariz., on Santa Fe R. R., making shipments very convenient:

1 150 h. p. high pressure tubular boiler and connections.
1 Bristol pressure recording gage.
1 4-mold Chisholm, Boyd & White brick press.
1 Hardening cylinder.
2 Turntables and track.
1 Buffalo blower.
1 Rotary lime grinder.
1 Long dry mixing box in top of main building.
1 Short wet mixing box in top of main building.
1 Mixing box between main conveyor belt and brick press.
4 Sets of belt elevators.
1 Elevator boot.
1 Tube mill.
1 Set ore crushing rolls.
1 Abbey lime grinder.
1 Old measuring machine.
2 Duplex steam water pumps.
1 3,000 gallon galvanized iron water tank.

26 Brick cars. Main conveyor belt, pipe, valves and fittings. All in good condition. Would prefer to sell entire outfit in one lot, but would consider inquiries for individual pieces. Address: Commercial Trust & Savings Bank, Prescott, Ariz. 2-2-1P.

EQUIPMENT SNAPS—Machine tools in perfect operative condition and equipment in stock for immediate shipment at big money savings.
20 in. x 12 in. Blake Jaw Stone Crusher.
4,000-lb. capacity Otis Power Freight Elevator.
35 H.P. Pierce Horizontal Gasoline Engine.
18½ in. 12 in. x 10 in. Worthington Duplex Steam Pump.
10 in. x 6 in. x 10 in. Blake Duplex Steam Pump.
50 H.P. Bullock—220 V., 3 ph., 60 cy. Motor.
20 H.P. G. E.—220 V., 3 ph., 60 cy. Motor.
4 yd. 2 side Western Dump Cars, 36 in. Ga.
Structural Steel, Lumber and Heavy Timbers, Pulleys, Shafting, Belting, Pipe, Roofing, Paint; in fact, material of every kind in tremendous quantities always in stock. Best service and lowest prices. Get in touch with us today.

Address: HARRIS BROS. COMPANY, Owners, CHICAGO HOUSE WRECKING CO., 35th and Iron Streets, Chicago.

FOR SALE—Down delivery attachment for Fate machine for making large sizes tile. Scarcely used and a bargain. Carlinville Clay Co., Carlinville, Ill. 11-2-TF

EQUIPMENT FOR SAND LIME AND CLAY BRICK PLANTS FOR SALE.

Six 6 ft. x 75 ft. dryer cylinders, 150 lb. steam.
Two hundred brick cars.
One 6 ft. x 50 ft. direct heat sand dryer.
Three 5 ft. x 22 ft. Abbe tube mills.
Five 4-mold Boyd brick presses.
Ten 8 ft. Stephens-Adamson mixers.
One 30 in. x 30 ft. belt conveyor.
One 24 in. x 50 ft. belt conveyor.
Four bucket elevators.
One No. 1 Sturtevant mill.
Complete plant for sale, at South River, N. J.
Also includes pumps, boilers, engines, rail, piping, pulleys, shafting, hangers, crushers, dump cars.
Send for complete list and prices which are exceptionally low.

WICKES BROTHERS.
Claremont & West Side Aves.,
Jersey City, N. J. 1-4.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and ironworking machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

—
—
RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.
—
—

—
STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.
—
—
—

MISCELLANEOUS.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.
—
—

SPECIAL OPENING.

OPENING—The owners of enormous deposit of finest red shale desire to interest parties in establishment of hollowware plant on same. Unequaled for sewer pipe, tile, etc. Brick plant now in operation on property. Chas. H. Stone, Winston-Salem, N. C. 2-2

BRICK MANUFACTURING INVESTMENT OPPORTUNITY.

There is an opportunity for investment in a Michigan paving brick manufacturing concern, that is on a paying basis. I can be seen during the convention in Detroit, February 15th-20th, or will gladly supply similar information on written request.

A. A. Fordon,
100 Griswold St.,
Room 204 (Detroit).

Tel. Cad. 2166.

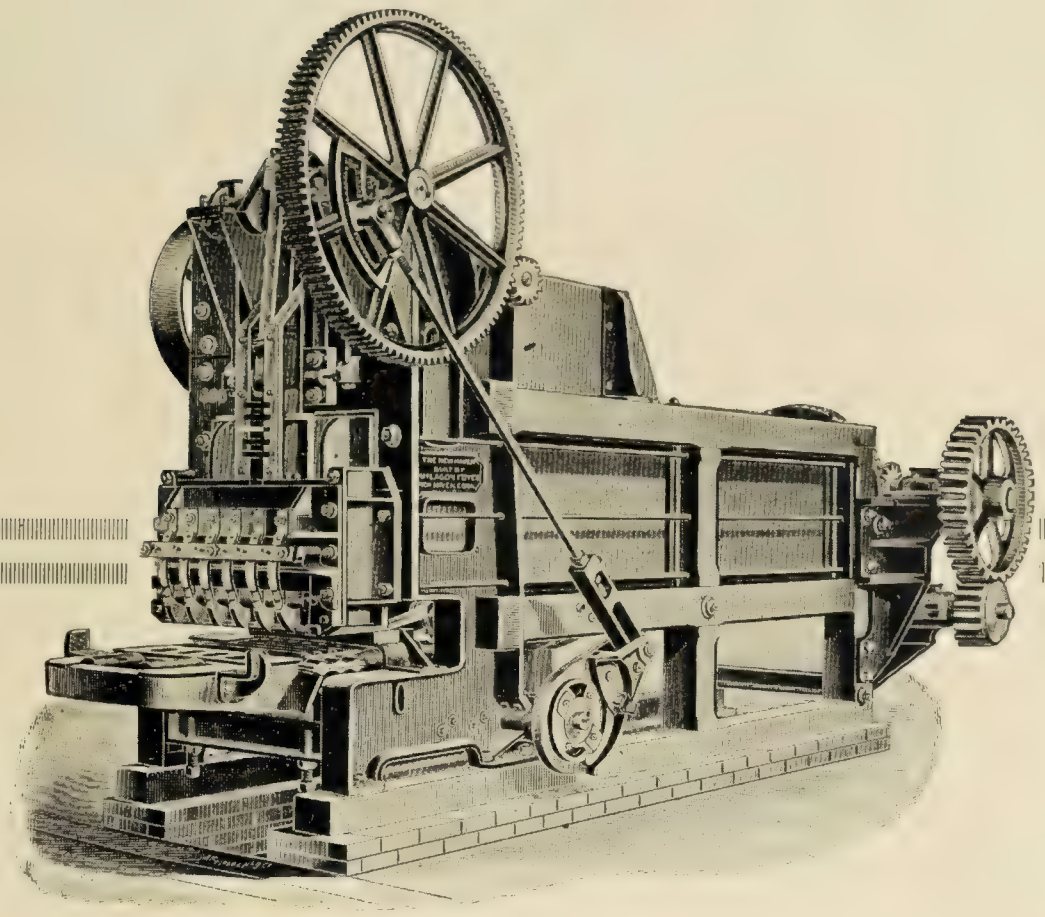
—
—
—
—
—
—

WE WILL PAY

Twenty-five cents each for copies of May 19, 1914, issue of "Brick and Clay Record." If you wish to dispose of your copy, address a postal to the Subscription Department, at once, advising them to this effect, and the price will be sent you—you to forward the copy by return mail. Only "whole" copies, in good condition, will be accepted.

BRICK AND CLAY RECORD,
445 Plymouth Court, Chicago, Ill.

—
—
—
—
—
—



Assets and Liabilities

Every piece of machinery is an asset and a liability.

A high (or low) first cost does not make it a greater or less asset.

The interest, merely, on that first cost, is a liability. So is the repair cost. So is the cost of power to run the machine.

Estimated depreciation, or a sinking fund. calculated upon the life of the machine is a greater, or less liability, in proportion to the known life of the machine.

Efficiency—the amount of product and quality of product—determines the amount of the asset.

Not what the machine *costs*—what it *does.*

In making brick machinery we did not attempt to make a low-priced machine.

We figured on making brick machines with the highest asset making qualities and the lowest liability making points.

We realized that more brickmakers wanted *results*—that is, *profits*—than wanted low-first-cost and high-upkeep machines.

The interest on the difference in cost is nominal, when compared to other liability items.

Not that our machines are too costly. They are built to work, built to wear, built to *run,* day after day, without a breakdown.

Have these points in mind when you look at brick machinery.

New Haven Soft Mud Brick Machines

Turn Out More Brick, More Perfect Brick, Last Longer, Have Fewer Repairs, Use Less Power and Have Fewer Break Downs Than Any Other Soft Mud Brick Machine Made

The Eastern Machinery Company

New Haven, Conn.

Know the ARBUCKLE First



The Arbuckle Radial Top Silo Block Cutter

THIS machine is designed for cutting Silo Blocks in plants where a simple efficient and moderate-priced cutter is required. It is particularly adapted to clays which will not stand the "bending and forming" method of cutting blocks of some cutters, by having the column run out onto a belt having alternate concave and convex platens with a roller on top which presses or bends the column to radius.

In a great many clays this method is wrong, owing to the fact that, in drying and burning the blocks will straighten out again. With *The Arbuckle* the column is made to leave the die in *curved* form by die adjustment, it runs out on the table, which has a top curved to proper radius. The column is correctly formed and cut, without subjecting it to any stretching, bending or distortion of any kind. These blocks dry and burn to proper shape.

The table can be built to cut any radius. Also to suit any height of die. Blocks may be cut *varying lengths* by the adjustment allowed on stop. The rollers and their pins are turned together in lathe centers, insuring freedom from eccentricity. A covering of felt or flannel is neatly applied to rollers.

ARBUCKLE AND COMPANY

RUSHVILLE, INDIANA, U. S. A.

BRICK and CLAY RECORD

Genasco Expansion Joints



GENASCO JOINT IN PLACE IN BRICK PAVEMENT

have all the advantages of other prepared joints for concrete, wood-block, brick, and granite-block pavements—economy, ease of installation, the avoiding of melting and pouring—and besides this

Are ALL Asphalt

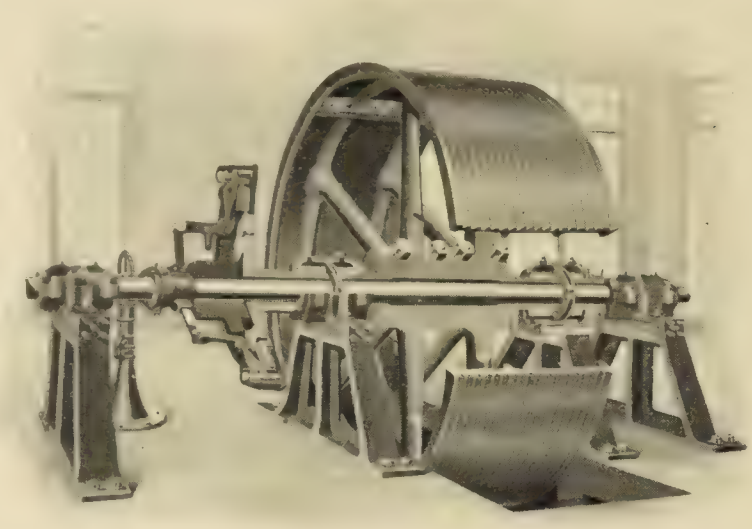
The ENTIRE THICKNESS of a Genasco joint serves the purposes of expansion and contraction. Ready-made joints that contain felt or some other form of re-enforcement cannot do the work of the Genasco all-asphalt joint. Any thickness or depth.

The best way to judge this joint is to see it. A life-sized sample will be sent to anyone interested. Write for it today.

The BARBER ASPHALT PAVING COMPANY
PHILADELPHIA, PA.

Vol. XLVI, No. 5 Chicago March 2, 1915

WELL ER-MADE



Quill Drives
for Heavy Power Transmission

More being used every day because they take the strain off the shaft and save the belts and power.

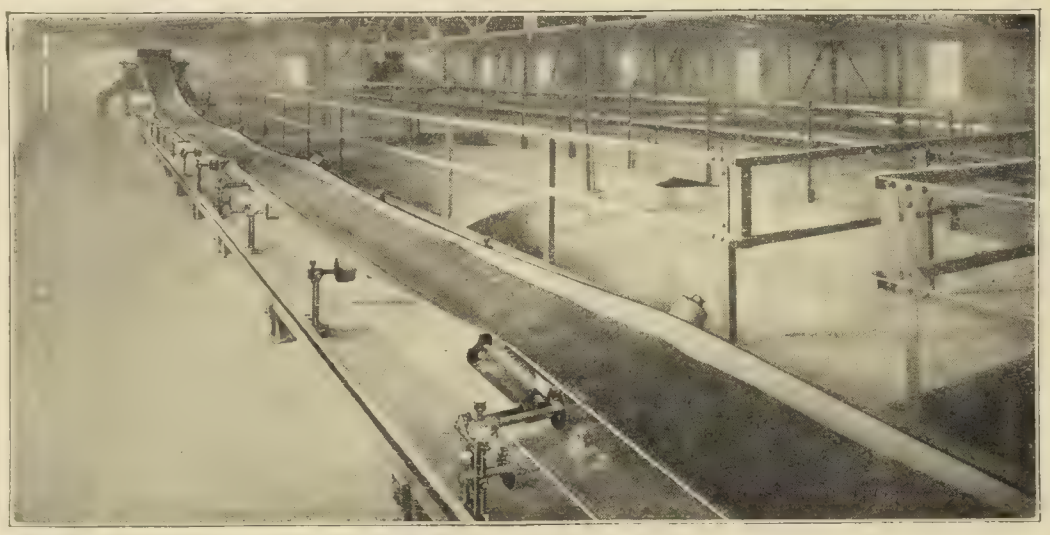
Send for our new Friction Clutch Catalogue J-27

We Build Elevators to Handle Anything

Buckets of every description, from light 2" x 2" tin
up to
Heavy Steel Buckets 84" wide and 36" pitch.

We furnish your complete elevating equipment with steel or wood heads, legs and boots.





Conveying Equipments For Handling Anything

From Crusher Run Shale to Dry Powdered Clay and Grog on to Pugged Clay or Dried or Finished Ware.

We are the People When You Want—

Elevating, Conveying and Transmission Machinery

Have You Our General Catalogue J-20?

Weller Manufacturing Co., Chicago

Trautwein DRYERS

INSURE YOUR CAPACITY

To have your plant *doing business* through 1915, you should have a Trautwein Dryer—so getting the

ASSURANCE

OF INCREASED CAPACITY
GREATEST ECONOMY
and LARGEST PROFITS

Our Dryers Accomplish These Things With Ease

Trautwein Dryer & Engineering Co.

Manufacturers—Engineers

Plymouth Building **CHICAGO**

Another Large Manufacturer Uses Smith Steel Shell Kilns

After careful and extended investigation, the Mason City Brick & Tile Co. has closed a contract for Claude Smith Steel Shell Kilns.

This Company (operating six plants) is the largest single company in the west making hollow ware.

WHY HESITATE WHEN SUCCESSFUL MEN USE UP TO DATE METHODS

A card to us brings further information

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Alliance Brick Co.....P-15
Alliance Clay Pro. Co...P- 8
Alsey Brick & Tile Co..P- 6
Ambursen Co..... 509
American Clay Machy. Co. 497
American Enameled Brick & Tile Co.....P-13
American Process Co... 504
Arbuckle & Co..... 510
Atlas Car & Mfg. Co... 480

Baird Machine & Mfg... 479
Ball Engine Co. (Erie Steam Shovel)..... 427
Barber Asphalt Paving Co. .....Front cover
Barr Clay Co.....P-11
Barrett Mfg. Co..... 499
Bartlett & Snow Co.... 503
Bessemer Limestone Co.P- 8
Bonnot Co. 514
Bradford Pressed Bk. Co.P-15
Brewer & Co., H..... 514
Broderick & Bascom... 430
Brown Instrument Co.. 511
Buckeye Rolling Mill Co. 473

Caldwell Co., W. E..... 473
Canton Grate Co..... 487
Carlyle Paving Bk. Co..P-10
Ceramic Sup. & Cons... 475
Chambers Bros. Co..426-479
Chase Fdry. & Mfg. Co.. 477
Chicago Bk. Machy. Co. 494
Chicago Mfg. & Distributing Co. 476
Chicago Retort & Fire Brick Co.....P- 4
Cincinnati Frog & Switch Co. 476
Classified Ads.....538-539
Clearfield Machine Shops 472
Cleveland Alloys Co.... 478
Copping Bros..... 472
Cling-Surface Co..... 475
Clinton Paving Bk. Co..P-11
Cutshall & Cutshall.... 476

Danville Brick Co.....P-10
Davis Fire Brick Co....P- 4
Davenport Loco. Wks... 474
Deavitt, H. M..... 472
Deckman-Duty Brick Co.P- 8
Dewey Bros., Inc..... 477
Dover Fire Brick Co....P- 4
DuPont Powder Co..... 484

Engelhard, Chas..... 430
Evans Clay Co.....P- 4

Fate Co., The J. D...540-541
Freese & Co., E. M.... 533
Frink Pyrometer..... 486

Gandy Belting Co..... 491
General Electric Co.... 429
General Traffic Assn.... 476
Gerlock, H. W..... 472
Globe Brick Co.....P-12

Hamburg Vit. Bk. Co...P-10
Hendrick Mfg. Co..... 474
Hetherington & Berner.. 503
Hinde & Dauch Paper Co. 475
Hook Patent Kiln Co... 485

Ironclay Brick Co.....P-12

Jackson & Church Co.. 492

Keim Brick & Tile Co...P-15
Keller Brick Co.....P-13
Kimbell, S. S., Brick Co.P-13
Klose, K. W..... 474

Lakewood Engr. Co.... 481
Lehigh Car Wheel & Axle Works 473
Lehigh Port. Cement Co. 478
Link-Belt Co..... 428
Logan & Kanawha Coal Co. 472

Main Belting Co..... 423
Manufacturers Equip. Co. 488
Marinette Iron Works... 496
Marion Machine, Fdy. & Supply Co. 536-537
Marion Steam Shovel Co. 425
Marsh-Capron Mfg. Co.. 480
Martin Bk. Machine Co. 483
Martin Grate Co..... 501
Mathews Gravity Carrier Co. 509
Maurer & Son, Henry...P- 4
Mayer Brick Co.....P-10
McArthur Brick Co.....P-12
Metropolitan Pav. Bk. Co.P-10
Mexico Bk. & F. Clay Co.P- 6
Mowrystown Brick & Tile Co. 505
Murphysboro Pav. Bk. Co.P-11
Murray Iron Wks. Co... 473

N. P. B. M. A.....P- 9
National Dry Kiln Co... 507
National Roofing Tile Co.P-15
Nelsonville Brick Co....P- 8
Nuttall Co., R. D..... 542

Ohio Galv. & Mfg. Co.. 504
Ohio Kiln Co..... 483

Pettigrew Foundry Co... 482
Phillips & McLaren.... 482
Pittsburgh Tile Mfg. Co.P-15
Purington Paving Bk. Co.P-10

Read & Day..... 475
Ricketson Mineral Paint. 472
Roessler & Hasslacher.. 481

Sackett Screen & Chute Co. 493
S. A. F. E..... 506
Sawyer Belting Co..... 508
Schaffer Eng. & Eq. Co.. 504
Schofield-Burkett 507
Shawmut Paving Bk. Co.P-10
Smith Co., Claude..... 421
Soisson Fire Bk. Co....P- 4
Southern Fire Bk. & Clay Co. .....P- 6
Standard Dry Kiln Co.. 502
Steele & Sons, J. C..... 535
Sterling Brick Co.....P- 6
Stevenson Co. 495
Stupakoff Laboratories.. 474
Sturtevant Co., B. F.... 489

Tecktonius Mfg. Co.... 503
Terre Haute Vit. Bk. Co.P-11
Thew Auto Shovel Co... 508
Thwing Instrument Co.. 513
Trautwein Dryer & Engineering Co..... 421

United Brick Co.....P- 8
United States Roofing Tile Co. P-15

Wallace Mfg. Co..... 534
Webb Wire Wks..... 503
Weller Mfg. Co..... 420
Williams & Co., C. K... 472

"Buy It Now" and "Build Now"

Editorial writers have devoted considerable space to the two slogans quoted above.

The first is supposed to be the cloud-burst that will bring the flood of prosperity, so that it will overflow the banks of the River of Doubt and flood the lowlands of Financial Depression.

The second is supposed to divert a goodly portion of the stream of dollars into the safest of all investments (not excepting **some** Government Bonds) — improved real estate.

A third slogan is well on its way—"Advertise It Now".

When "Buy It Now" gets in its fine work, the man who has bought his advertising early will find that he, in turn, has a little private race-way, in which a current of dollars will flow, to turn the wheels of his business machinery.

When "Build Now," aided by the ever-lowering cost of building money, starts the clay products plants working overtime, the man who is well into his advertising campaign will be busy booking orders.

The letter "P" preceding a number refers to the "Pink Section"

YES!

"You can do without

Leviathan

but you can't do so well"

For particulars, ask the man with
the dividend producer, or write us

Main Belting Company

Manufacturers and Engineers

Philadelphia New York Chicago
Pittsburgh Seattle Birmingham

Main Belting Co. of Canada, Ltd.
Montreal Toronto

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



187 Pages, 5x7, Illustrated $2.50

THIS ENGLISH BOOK, one of "The British Clayworker" manuals, is the second edition of the work by H. Ansell, rewritten and enlarged.

It covers the manufacture of glazed brick, and glazed sanitary ware, having chapters on fireclays, on grinding, tempering and molding, and on drying floors.

It deals with the various processes of making enameled brick, of pressing, stacking and dipping, and gives formula for bodies and for glazes.

It is particularly strong on recipes for the colored glazes, and on this point alone, is well worth the price.

This book is on sale, through "Brick and Clay Record's" Book Department, for $2.50, postage prepaid.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy)....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller)....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

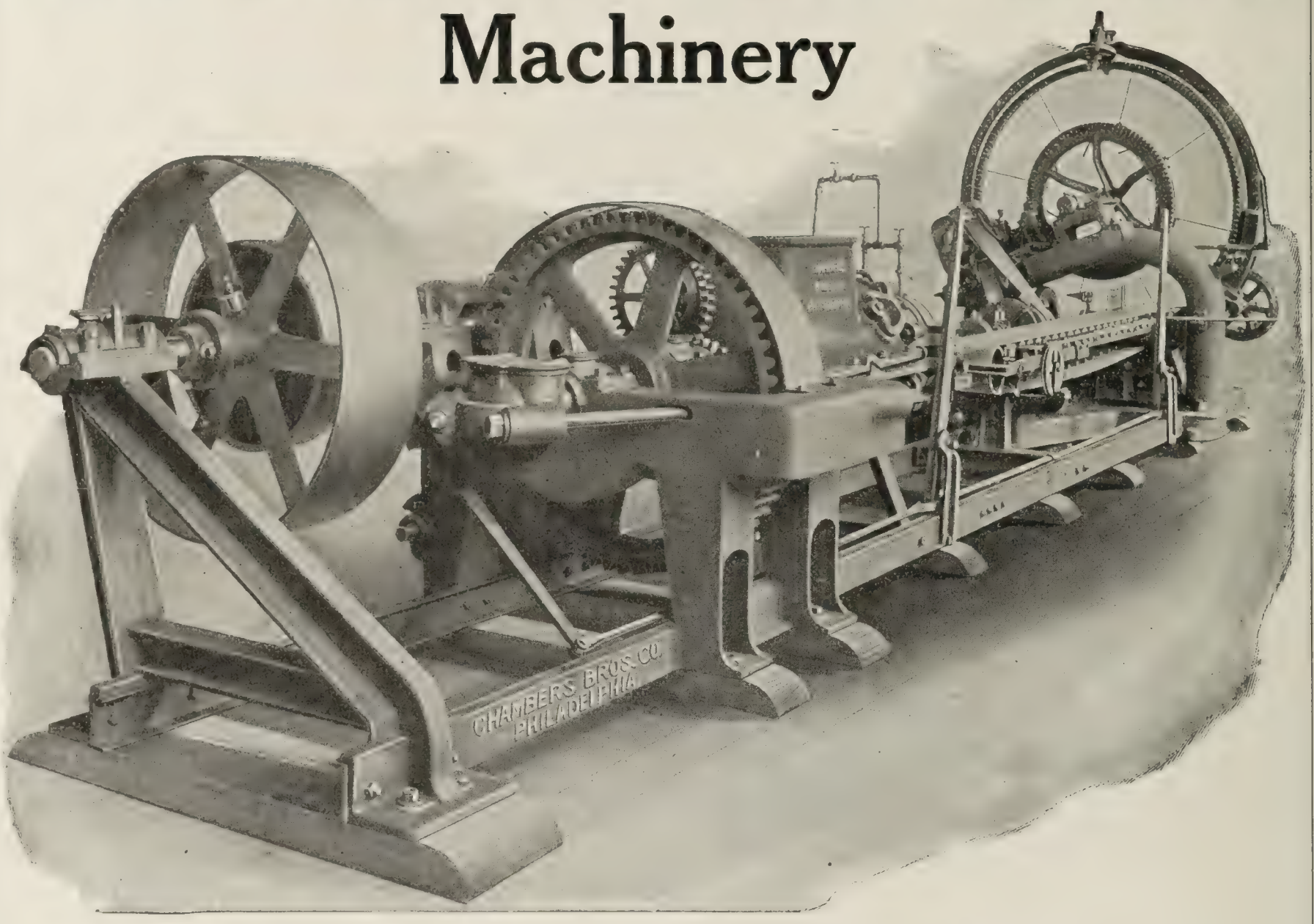
THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators
and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 471)



Stripping Shale at Greer-Beatty Clay Co.'s Plant, Magnolia, Ohio

Erie Revolving Shovels

A Few of the Leading Superiorities

ERIE AUTOMATIC CROWDING DEVICE:
Level floor bottom automatically maintained.

THREE LEVER AUTOMATIC CONTROL:
"One Man" operation assured. Shovel operated by only three throttle levers and a foot brake.

LARGER RANGE OF ACTION:
Cuts higher banks. Has greater reach. Fewer moves required.

"CLEAN CUT" ADVANCED DESIGN:
Operating parts readily accessible. Unusual room in cab. Every detail thoroughly perfected. Designed by men who **know.**

PRACTICALLY ALL STEEL CONSTRUCTION:
Built for service throughout.

ENGINES PROTECTED FROM DUST:
Three sets of double engines enclosed in dust proof, yet accessible housing.

Ask For Particulars

You'll be interested in our Catalog A—Send for it today

Ball Engine Company, Erie, Pa.

Link-Belt Silent Chain

Flexible as a Belt—Positive as a Gear
More Efficient than either

NOTE the absence of shock or vibration on motor and bearings. See the clear letters on the name plate.

Look at the smooth running 60 H. P. Silent Chain Drive running at full speed.

In the clay working plant this means efficiency, long life for motor and drive, quietness, satisfaction; service, 24 hours per day.

It will pay you to specify Link-Belt Silent Chain for your own transmissions—for line shafts, pumps, compressors, machine tools, granulators, dry pans, wet pans, conveyors, pug mills, feeders, auger machines, cutters, blower fans, etc. Our Data Book No. 125 gives all particulars.



This Illustration

was reproduced from an actual time-exposed photograph, without "retouching." It proves some of our claims for the Link-Belt Silent Chain Drive.

60-H. P. Link-Belt Silent Chain Drive operating Clay Mixer

Prices, methods of figuring, etc. contained in Data Book No. 125. Sent free on request. Address nearest office.

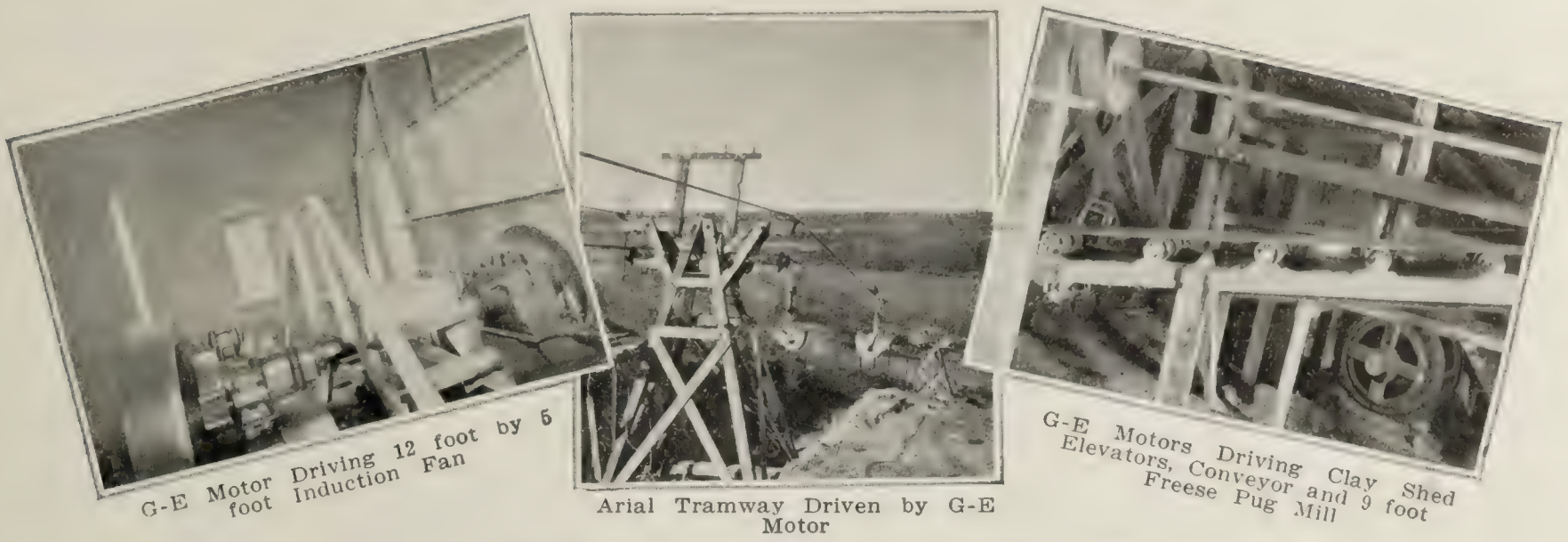
LINK-BELT COMPANY

PHILADELPHIA **CHICAGO** **INDIANAPOLIS**

New York.....299 Broadway
Boston.....49 Federal St.
Pittsburgh.....1501 Park Building
St. Louis..Central National Bank Bldg.
Buffalo.....698 Ellicott Square

Birmingham....General Machinery Co.
Cleveland.....Rockefeller Building
Detroit.....911 Dime Bank Bldg.
Seattle.....580 1st Ave., South
Denver.....Lindrooth, Shubart & Co.

San Francisco..Meese & Gottfried Co.
New Orleans.....Whitney Supply Co.
Los Angeles....204 N. Los Angeles St.
Minneapolis....Link-Belt Supply Co.
Montreal, Can..John Millen & Son, Ltd.



G-E Motor Driving 12 foot by 5 foot Induction Fan

Arial Tramway Driven by G-E Motor

G-E Motors Driving Clay Shed Elevators, Conveyor and 9 foot Freese Pug Mill

Boone Brick Tile and Paving Company, Boone, Iowa

15% Saved in Cost of Operation Plant Capacity Increased 25%

The Boone Brick, Tile and Paving Company, Boone, Iowa, equipped their 70,000 brick plant with motors manufactured by the General Electric Company.

Represses, brick machine, pulverizer, pug mill, elevator and conveyor, aerial tram, induction fan, exhaust fan, disc fan and pump are all driven by G-E motors.

Before this company installed G-E motors they paid $1.38 per ton for coal. They now purchase electric power for approximately two cents per kilowatt, realizing a saving in cost of operation of about 15% and increasing the capacity of their plant 25%.

Our motor drive experts will be pleased to study your local conditions.

General Electric Company

General Office: Schenectady, N. Y.

ADDRESS NEAREST OFFICE

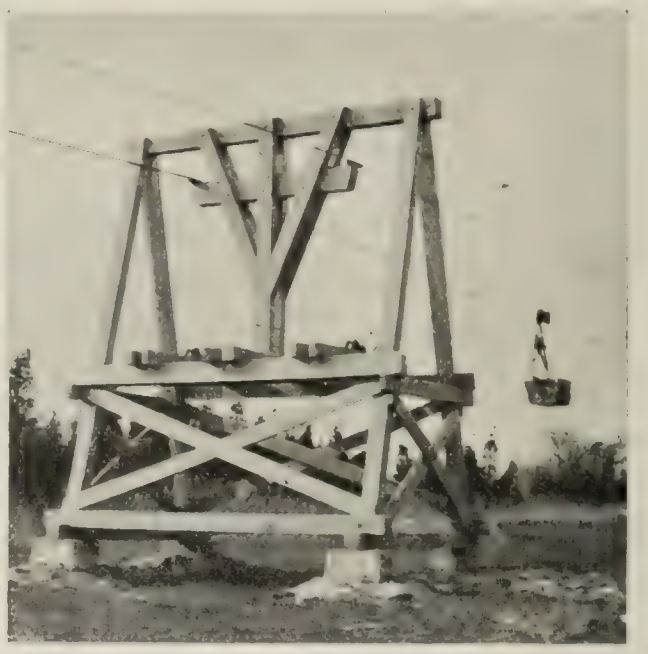
Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dayton, Ohio
Denver, Colo.
Des Moines, Ia.
Detroit, Mich.
(Office of agent)
Elmira, N. Y.
Erie, Pa.
Fort Wayne, Ind.
Indianapolis, Ind.
Jacksonville, Fla.
Joplin, Mo.
Kansas City, Mo.
Knoxville, Tenn.
Los Angeles, Cal.
Louisville, Ky.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
Salt Lake City, Utah
San Francisco, Cal.
St. Louis, Mo.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5244

Motor Agencies in All Large Cities and Towns.

Mention "BRICK AND CLAY RECORD" when writing to advertisers

IMAGINE loading a tramway bucket and pushing it a few feet—then not having to think about that bucket or its operation again until it returns empty and right side up for another load. That would be perfect tramway service, wouldn't it? That is exactly the kind of service you get from a



B. & B. Friction Grip Tramway

The carriers are automatically attached to the pulling cable while in motion and travel to the unloading station. There they dump, right and lock themselves automatically while moving. They then return to the loading station where they detach themselves from the pulling cable.

The construction is perfect. The automatic attaching and detaching devices are simple, sure and practically foolproof. Installation and maintenance are low. If the grade is sufficient, gravity will supply all the power. Let us tell you what our Tramway will cost you and how much it will save you. Just explain your haulage conditions. AND ASK FOR CATALOG NO. 16. We have a Seattle Factory for promptest handling of all Pacific-Coast orders.

FREE MAGAZINE SUBSCRIPTION. If you're a rope user and are interested enough to write for it, you'll get our beautifully illustrated monthly magazine. THE YELLOW STRAND, free for a year. Write now.

BRODERICK & BASCOM ROPE CO., ST. LOUIS, MO.

Branches: NEW YORK and SEATTLE. *Agents everywhere.*

Instrument perfection has been reached in our Multiple Recorders. They give a permanent Time-Temperature Record on a maximum of Six.

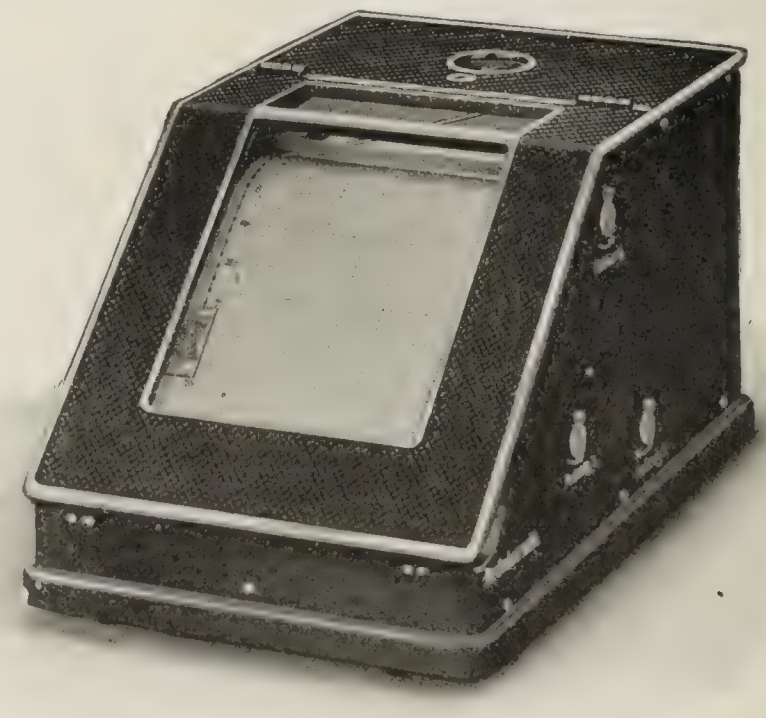
HERAEUS Le Chatelier PYROMETER

"The ultimate pyrometer"

Each record is absolutely and clearly defined from the others. The Instruments have a separate indicating scale for observation. The charts are continuous and have rectangular coordinates. There is no ink or other recording medium to stick or smear or to be replenished. Pen friction is entirely eliminated.

Their extremely high resistance (about 500 ohms) makes possible the use of both Indicating and Recording Instruments on the same Thermocouples, allowing the use of a central Indicating System for the burners and a Recording System for the Superintendent in his office.

With such a system better results can be obtained and the expense of an entire Recording Installation is made unnecessary.



We Supply Pyrometer Installations

"MADE FOR YOU" not "MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD

30 Church Street
NEW YORK

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, March 2, 1915

Vol. XLVI No. 5

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

Table of Contents

Ceramic Convention Huge Success . 451

Plan Immense Publicity Fund for Building Brick 434

Proper Construction of Hollow Ware Dies 457

Reaching the Farmer 454

Real Building Brick Promotion . . . 453

Convention Souvenirs and the Givers 485

Unconventional Convention Gossip 478

The Editor's Corner 432

Freight Tariffs and Troubles 466

Machinery and Equipment 469

Questions and Answers 472

Semi-Monthly Trade Review 476

The Superintendent 467

Wake of the News 489

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

UPPERMOST IN THE THOUGHTS of the manufacturers of common- and face-brick who attended the convention recently held in Detroit, is the decision of the Executive Committee of the National Brick Manufacturers' Association to put brick on a par with competing materials, so far as a "promotion fund" is concerned.

The report of the "Committee of Ten," made at one of the closing sessions of the convention, was that the objective point was the accumulation of a fund, based on two cents per thousand output of common- and face-brick.

The building brick production of the country, in 1913 (the latest Government statistics) was 8,916,455,000 and, at two cents per thousand, annually collected, this would annually yield $178,329 for publicity, or close to $900,000 in five years.

In view of this action on the part of the manufacturers of building brick, the action taken in Chicago, on Thursday, February 25th, is significent. At that time, a "Department of Trade Extension" was established by the National Lumber Manufacturers' Association, through which the annual expenditure of $200,000 was planned for a period of five years.

So lumber pits its million against an almost equal sum that is to be spent for the promotion of brick.

In the lumber campaign, the initial work is well defined. It includes the "compilation of fire-losses, insurance rates, building codes, uses of wood, substitutes for wood and anti-wood legislation; the co-operation with other organizations of woodworking and wood-consuming interests; the teaching of uses for wood, through speakers, bulletins, newspaper and magazine articles, exhibits, etc.; technical investigations of wood as construction material, and the development and extension of practical fire-prevention methods."

The method of raising the funds necessary for this work is the levying of an assessment of one-and-two-thirds cents per thousand feet, on the output of the National Lumber Manufacturers' Association.

Wood Has the Money

The lumber interests are in earnest. They are ready to march, as was the German army in its invasion of Belgium. They are armed with the modern weapon—a greater means of offence and defence than Zeppelins, submarines or forty-two centimeter guns. It is an adequate treasure-chest, or war fund.

The lumber interests are united. They are ready to promote the use of wood, whether it be shingles, siding, rafters, beams or pillars. They have no quarrel with each other. **They aim to stop the impression that wood burns.**

The brick interests, on the contrary, have a few family quarrels that, being fought out of court, make discordant sounds and unfriendly relations.

The word "brick" should be made to include everything made of burned clay that goes into building construction. The difference between a common-brick and a hollow building-brick is one of weight, and air-space.

The difference between a hollow tile and a hollow brick is one of size.

The difference between a tile arch and one of brick is a difference of locality and adaptability.

The difference between a roofing tile and a brick is that the former is flattened and rolled, and sometimes enameled—but then, so is a brick.

The difference between a brick and a wall tile or a floor tile is a matter of measurement—sometimes the cubic content is identical.

All are made of burned clay. All are used in building construction. All have the same claim—endurance against time, against fire. There is nothing that can be said about one that cannot be said about the other.

They are, indeed, of the "Brotherhood of Clay."

Burned Clay vs. Wood

So the fighting lines will be well defined. It will be burned clay against wood. If the army of clay be wisely generaled, it will not divide itself into three or four fighting corps, one striking at concrete, another at gypsum, another at stucco-finish on any old foundation.

If it have a quarrel with cement, it will be because cement is being used in places where brick construction would have been better—**which means safer or more economical.** Otherwise, it will recognize the fact that cement-concrete has a place in the building world, and that it is folly to assume that hundreds of erecting engineers are venal, or ignorant, or insane.

If the fighting force of burned clay be well directed, it will be with the thought that we use dried wood for kindling, and that to build our homes of what is actually "kindling" is the height of human folly.

Statistics on fire-losses show immense industrial wastes. At best, however, they are but money-figures, speaking in mere whispers to our understanding.

The sting comes to us and becomes personal, when we see what the destroying flame-tongue has done to **our** home, **our** factory—**perhaps to our family.**

Statistics may show that there is a greater money-loss in fires that occur in so called fire-resistant structures, than there is in frame buildings—it is a question.

The great cement fire at West Orange, N. J., had an estimated loss of Five Million Dollars. It would take a mile of frame dwellings to equal that loss, if only the money of it were in the scale.

But that mile of frame dwellings would mean a city of homelessness, an impoverished community, a loss of respect, of home-ties.

The fight that brick must make is against flimsy building. With the lumber men, brick manufacturers will do well to look into "a compilation of the fire-losses, insurance rates, and building codes," and do a Nation's work, in making the Nation's people "Safe from Fire."

If, in this work, it finds that cement, and any competitive material, properly made and properly used, may reasonably be regarded as fire-resistant, it would seem sensible if brick would form an alliance with such materials, and leave the distribution of the spoils—won from wood—to the good sense of American architects and construction engineers.

For a great part of the future of brick lies in its power to wrest the residence construction of the smaller centers of population from wood. It means a closer-at-home market and one which will grow as the home-town grows in wealth and population. At the present time, it is said, eighty per cent of the residence building of the country goes to frame.

In the cities the building codes and the fire-limits have, in a large measure, taken care of the brickmaker, in forbidding the erection of wooden houses.

But out in the smaller cities, the towns and villages, where fire-protection is inadequate, the home-builder "Builds to Burn"—not only the house he is building, but that of his adjoining neighbor.

So—when the **arguments for frame** are so poor, and the **arguments against frame** so good, does it not seem silly to waste any ammunition on **any** material,—be it burned clay, cement, gypsum, or what-not—that has, for its principal argument, the very reasoning that brick is using, in its own selling talk?

Will Brick Subscribe $50,000

Another part of the plan formulated at the meeting of the lumbermen, was that the work would begin **as soon as $50,000 was raised.** In other words, the issue was put right up to the membership of the association. If a quarter of them showed the proper appreciation of the plan, then it was going to become something more than a plan—it would be made into a living, breathing, strength-developing movement.

The issue is just as squarely put up to the brickmakers. If a quarter of the plants in the country will devote two cents per thousand on their 1913 output, to the work of taking brick out of the slough of despond and making it a paying industry—the "Committee of Ten" will not have labored in vain.



Detroit, the "City Where Life is Worth Living"

The "Big News" of the Convention

The Executive Committee of the National Brick Mfrs. Association instructed President C. P. Mayer to appoint a committee of twenty-five to secure a fund, based on two cents per thousand on the total building brick production of the country, approximately Nine Billion (taking 1913 Government Report figures), or $180,000 annually. This sum is to be devoted to publicity and is to win back the markets that brick has lost to frame, concrete and gypsum.



WILLIAM B. WREFORD

The Man to Whom the Greater Part of the Credit is Due for the Successful Conduct of the Twenty-Ninth Annual Convention of the N. B. M. A., Held in Detroit, Mich., Feb. 25 to 20

Plan Immense Publicity Fund for Building Brick

Fritz Salmen, of Slidwell, La., Heads Committee that Will Give Brick a Promotion Fund Equal to that of Any Competing Material. Convention Enthusiastic as Brick Takes Its Place Among Nationally Advertised Building Materials

IT WAS A BUYING CONVENTION, as predicted in the last issue of this magazine. The manufacturers of clayworking equipment reported more "nibbles" than had come to them at any previous convention—the brickmakers admitting that they needed new machinery, new methods, new equipment, generally—rather than repairs to the old.

The same spirit was carried into the convention hall, where the announcement that the executive committee of the National Brick Manufacturers' Association had agreed upon a national publicity plan, was received with round after round of applause. It looks as though the brickmaker had made up his mind to buy a market, and try to save the purchase price by installing cost-reducing machinery. He figured that better equipment would save more than the two cents per M. called for.

This publicity movement, which aims at a sum close to $200,000 yearly, was



CASPER P. MAYER
President



CHARLES J. DECKMAN
First Vice-President



THEODORE A. RANDALL
Secretary

brought to life by Fritz Salmen, raised to the purple of the N. B. M. A. at the New Orleans convention. He showed his executive ability, when, encumbered with a committee of twenty-five, he suggested that ten men be chosen as a sub-committee on plan and scope. This gave him an opportunity of shelving the "non-combatants" and gave into his own hands the selection of a committee that believed in deeds, rather than words.

"Will" Wreford, the genial and altogether efficient secretary of the Detroit Brick Manufacturers and Dealers' Association, has written an article about this committee, which appears on another page of this magazine—so further mention is unnecessary—except that the committee is a good one, and deserves the most enthusiastic support. Anything less than enthusiasm will wreck the whole plan and scope—and this publicity movement, like many that have gone before it, will die of discouragement.

Following the time honored custom of the association, the president who had served since the last convention was retired and the first vice-president elected to succeed him. This was followed by the "moving up" of the second and third vice-presidents respectively and the election of a new third vice-president.

In every case the elections were unanimous, the result being that the destinies of the association will be controlled by C. P. Mayer, of Bridgeville, Pa., as president; Chas. J. Deckman, of Cleveland, Ohio, as first vice-president; Fritz Salmen, of Slidell, La., as second vice-president, and George H. Clippert, of Detroit, Mich., as third vice-president. Theo. A. Randall, of Indianapolis, Ind., and John W. Sibley, of Birmingham, Ala., were re-elected secretary and treasurer respectively.

The two vacancies that existed on the Committee on Technical Investigation were not filled, this being left to the discretion of the executive committee. The vacancies in question were caused by the expiring term of Ross C. Purdy, Cr. E., and the death of D. V. Purington.

"Convention Week" opened with the seventeenth annual



FRITZ SALMEN
Second Vice-President



JOHN W. SIBLEY
Treasurer



GEORGE H. CLIPPERT
Third Vice-President



THE BADGES THAT MADE THE GUESTS AND DELEGATES LOOK LIKE GERMAN GENERALS

The First is the "Official" Badge of the National Brick Manufacturers' Association, the Bar Being of Oxidized Silver and the Ribbon a Dark Red. The Numbered Button was White with Red Lettering. Next to It is the Souvenir Badge Distributed by "Brick and Clay Record," Having a "King's Blue" Ribbon, the Bar Being in Gold Plate and the Triangular Medal in Blue Enamel with Gold Lettering. This Badge was Accompanied by a Buckle and Strap, Permitting Its Being Transformed Into a Watch Fob. The Official Badge of the American Ceramic Society was Light Blue in Color, the Lettering Being in Dark Blue. The Oxidized Silver Bar Contained a Place for a Card, Showing the Name of the Member. The Fourth Badge was that Distributed by St. Louis "Boosters" the Button Being of White Celluloid with Dark Blue Lettering and the "Locust," in Green Colored Metal, was So Arranged That When Pressed, It Emitted a Loud "Click." The Ribbon Bearing the Words "A Knight of Good Roads," was Distributed During the Early Days of the Convention and was Worn During the Entertainment Provided by the National Paving Brick Manufacturers' Association

meeting of the American Ceramic Society, which was called to order during the forenoon of Monday, Feb. 15th, continuing its sessions until late in the afternoon of Thursday, the 18th. Further mention of these sessions is made in another part of this magazine.

The National Paving Brick Manufacturers' Association held a meeting of its executive committee on Tuesday, the 16th, and this was followed by a "Night of Good Roads," in the form of an evening entertainment, giving in the Convention Hall of the Hotel Statler.

The entertainment consisted largely of a stirring speech by Jesse Taylor, editor of "Better Roads," who pointed out



A. V. Bleininger



W. D. Richardson



Edward Orton, Jr.

THE THREE SURVIVING MEMBERS OF THE COMMITTEE ON TECHNICAL INVESTIGATION

the immense sums involved in government expenditures for post office and other buildings, as well as for the dredging and other "improvement" of waterways that carry a ridiculously small tonnage in the way of commerce. Comparing these expenditures with what municipalities and states are expending on better highways, he stated that if the government would expend half of the amount now wasted in its appropriation bills, devoting it to the building of better highways for the people, the country would be benefited beyond the fondest dreams of the good roads enthusiast.

Stanley McMichael, secretary of the Cleveland Real Estate Board, of Cleveland, Ohio, spoke of the immense value of improved highways and gave a strong presentment of the economy and excellence of brick. He was followed by Professor Frederic N. Menefee, of the Michigan State University at Ann Arbor, Mich. Professor Menefee's paper was illustrated with lantern slides and met with the approval of a large and deeply interested audience.

As usual, Secretary Blair and his first lieutenant, H. H. Macdonald, were very much in evidence. With true Paving Brick Association hospitality, they passed cigars and urged each taker to "have another." In this and many other ways the "Night of Good Roads" was one of the most pleasurable incidents of "Convention Week."

The first session of the National Brick Manufacturers' Association convention was opened Wednesday afternoon, Feb. 17th. The Reverend W. E. Sayres gave the invocation and was followed by an address of welcome, delivered by one of Detroit's prominent officials. After an eloquent response delivered by A. R. D. Johnson, of Raleigh, N. C., the president, Eben Rodgers, of Alton, Ill., read the annual address, which follows:



Frank J. Nixon, of Duluth, Minn., and Ben S. Fisher, of Columbus, Ohio

One year ago in that beautiful pleasure-giving, peaceful city of New Orleans, we adjourned the 28th annual convention of the National Brick Manufacturers' Association. We returned to our homes with the feeling that the spirit of progress was more than ever permeating business, finance and civilization throughout the world.

None of us ever dreamed that before the convening of the 29th annual convention, the business fabric of the world would be strained almost to the point of disintegration, the financial systems subjected to a revolution and that our civilization would meet what on first thought, would seem to be its death blow.

The manner in which this country has met this sudden crisis, speaks volumes for its institutions and for its citizens.

While the entire country has felt the shock of this situation, there seems to have been one city that has withstood it better than all the others, and I think we are quite fortunate in having chosen that city for our meeting place at this time. We will without doubt be greatly benefited by coming in contact with the people of this city of wonderful progress.

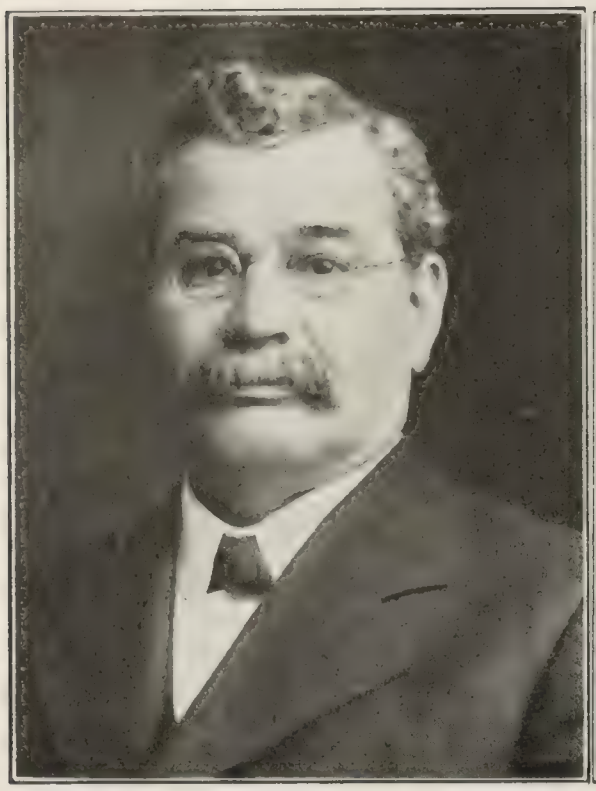
It is generally conceded that the worst has passed and that we are about to enter a period of great prosperity, but there are so many new problems arising daily that must be correctly solved, if our prosperity is to continue, that I think my message to you today should be one of co-operation.

Co-operation with the Government, co-operation with the State, co-operation with the community and co-operation with each other in the clay working industry.

Our Government has rightly undertaken to remedy some of the abuses that have crept into business and financial methods.



The National Brick Manufacturers' Association Banquet, the First Convention Banquet to be Held in the New Hotel Statler



J. A. Mercier



John S. Haggerty



William Clippert

DETROIT BRICKMAKERS WHO HELPED MAKE THE CONVENTION A SUCCESS

but it will require the co-operation of the business man to make these remedies beneficial rather than detrimental. For this purpose we are associated with the Chamber of Commerce of the United States. I believe this is the one organization in this country that is able to crystallize and present to the Government the best business sentiment of the nation and I urge you to co-operate with it.

There are now and will be selfish interests clamoring for recognition of policies that are only of benefit to them as individuals and are detrimental to our general welfare and embarrassing to our Government.

It will require the combined effort of every unselfish, right thinking citizen, to uphold those in authority in order that our neutrality may be maintained with honor and dignity. Your Government needs your co-operation today more than ever in its history.

Our States are rightly undertaking, through legislation, to provide for the victims of accidents in industrial pursuits and to generally improve the conditions under which labor is performed.

The legislatures, through enthusiastic or other motives, are liable to bring about a condition that will be harmful rather than beneficial to the very people they are trying to help. It is our duty to study these questions and see to it that this legislation assumes the right form.

Just, solid and workable laws can only be framed with the active, earnest co-operation of the business man. Community interest has developed in a large degree during the past few years. The man of questionable business and of questionable motives is rapidly losing his influence in the community and organizations are being maintained to develop the community spirit and improve the living conditions and to throw safeguards around our children, in order that they may have a better opportunity to become good and valuable citizens. I urge you to co-operate with these organizations.

How can we co-operate in the clay working industry? Have any of us secret methods of operation that are too valuable to disclose to our neighbor?

It seems to me that local or district meetings of superintendents and burners, to frankly discuss problems common to all, would be of great benefit. The attendance of representatives of clay working schools and research laboratories at these meetings would be of great value.

Such co-operation would produce a literature that would be useful to those who come after us, and our experiences would not be buried when we die. I would urge renewed co-operation in trying to induce every manufacturer of clay products to keep an accurate cost system. This system need not be uniform, but it should be practical and adapted to the branch of the industry to which it is applied. A competitor that really knows his cost is not dangerous.

We may perfect our manufacturing processes and reduce our production costs to a minimum, but unless we can convince the public that it is to their advantage to use our material we will not prosper. There has been much good publicity given to clay products in the past few years, but these efforts have not had the support that they deserve. The many have reaped what benefits have accrued at the expense of the few.

Hearty co-operation in this field will place our industry where it belongs. We must have close-order fighting, combining all our scattered efforts to the one purpose of truthfully exploiting the advantages of burned clay.

Personalities must be forgotten. Manufacturers of inferior competitive materials have used co-operative methods and placed their products where burned clay would have been of far greater value to the user. So long as we stand around and whine about the use of concrete and other substitutes for burned clay, and deplore the shortcomings of our fellow clay worker, just so long will we progress backward.

Each of us must determine to put a fair share of money and personal effort into one common fund to promote our business. Unquestionably we have the goods, we admit it to one another, but it would seem that we are trying to keep this a secret from the general public.

Our material is of sufficient merit that only the truth need be told about it to convince the public of its worth, but truth does not disseminate of its own momentum, it must be pushed and constantly urged, while misstatements and false representations travel as if they had wings. Let us co-operate to put the truth about our product in such a form that it will be constantly before the eyes of the public.

Other materials have volumes written describing methods and cost of using them. We have comparatively little of this information at hand. This cannot be prepared by the individual, but only by the co-operative effort of all. I sincerely hope that before this convention adjourns some constructive program will be outlined that will enable us to better co-operate in this field of promotion. These suggestions are directed with particular emphasis to the common-brick maker, as I believe this branch of the business has done less of this co-operative work than any other.

I would urge a greater co-operation with the man that places our material in its final resting place. Our interests are common and I believe a closer relationship with the bricklayer will result in cheaper and better construction with more profit to all concerned.

I have but touched in a general way the many phases of the clay working industry. It would be impossible to go into details in an address of this kind. I hope you will think over these things and devote the best of your individual thoughts for their proper solution. Our business is one of the most important in the world's progress and it is our duty to put forth our highest ability in developing it to the point of greatest usefulness to the public and leave it to the next generation on a higher plane and freed from some of the problems that it contained when we received it.

The treasurer's report, made by John W. Sibley, of Birmingham, Ala., was read in Mr. Sibley's absence and showed that the financial standing of the association was all that could be desired.

Following this came the election of officers, which resulted as has been told in a previous paragraph.

Following the installation of the officers and reports of committees, a paper was read by Edward Orton, Jr., E. M., Professor of Ceramic Engineering at the Ohio State University, he taking for his subject "Progress in the Education of Clayworkers," and following him, Floyd E. Waite, representing the Society Advocating Fire Elimination, of Cleveland, Ohio, made a strong presentation of the folly of "building to burn." Fortunately he did not confine his remarks to a general telling of how much better fireproof construction was, than that of the flimsier order. He realized that he was talking to men who were well versed in arguments of that character. Instead he launched out into the more practical side of the question—how these men who understood that they made the best building material on earth, could transfer this knowledge to the minds of the thousands of home builders in the country.

In pointing out the fact that more than eighty per cent

of America's residential building was done in frame, he used as an illustration, a boy who had gone blackberrying. He spoke of this boy's coming to a fence on one side of which two bushes were growing, while around these two a number of other boys were scrambling for an opportunity to pick a berry here or there. On the other side of the fence eight bushes grew unmolested. He said that the object of the Society Advocating Fire Elimination was to tear down the fence and give the boys (who are the men who make and sell fire-resisting materials) a chance at all ten bushes—particularly the eight that are so fruit laden and so fenced in with the ignorance of the building public and the promotion funds of the lumber interests.

This paper closed the afternoon session and the convention adjourned until the evening when a "Smokerette" was held under the auspices of the Detroit brickmakers. Those who were fortunate enough to secure seats or even standing room at this entertainment were well repaid for their foresight in appearing at the convention hall door somewhat early. Those who came later found a packed house and, although the convention hall of the Hotel Statler is a room of no mean proportions, it was filled to overflowing early in the evening.

One of the notable things about this convention was the manner in which all of the entertainments catered to the fair sex. Evidently Detroit looks forward to the day when Michigan will align itself with other and more progressive states where women have the suffrage. This was marked by the deference paid the women visitors to the earlier sessions of the convention (when the men refrained from smoking), and in the addition of the four letters which were attached to the word "Smoker" in connection with Wednesday night's entertainment.

It had been the custom in the past, to arrange one evening in "Convention Week," when the women, duly escorted by the "Ladies' Auxiliary" (and such husbands as could not do otherwise), were in attendance at various theatres and other places of entertainment, the while the delegates at large enjoyed their "Smokers" without the "ettes."

Local committees did their utmost to make the convention a success, both in the matter of valuable information to be given by the speakers and in the entertainment of the visitors. These committees were as follows:

Executive—George H. Clippert, chairman; Charles Bryan, John S. Haggerty, Albert Lonyo, Fred McDonald, John A. Mercier, George Sass, William B. Wreford, secretary.

Entertainment—Charles Bryan, chairman; William Clippert, William L. Holmes, Ralph Spencer, F. B. Stevens, William Thomas.

Finance—John S. Haggerty, chairman; Charles Clippert, Jacob Daniel, Charles Frank, F. B. Holmes, John A. Mercier, Ferdinand Porath, Jr.

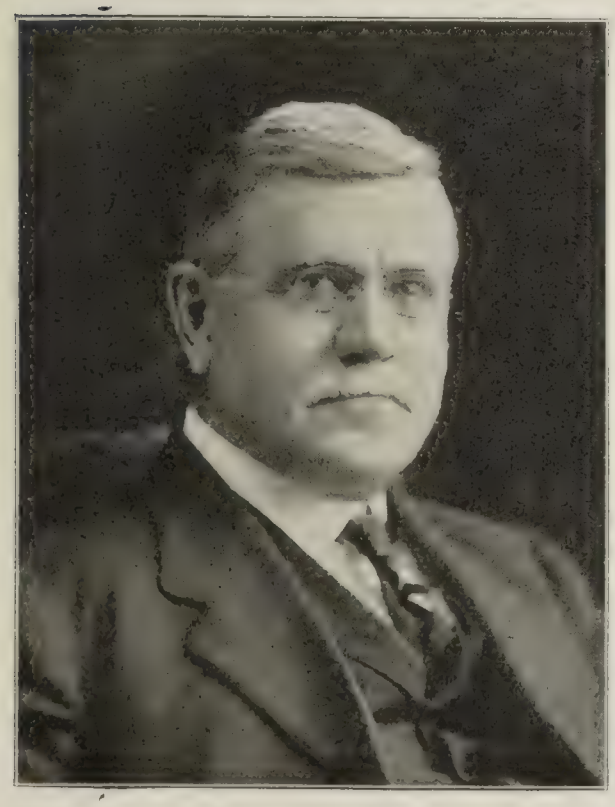
Mrs. George H. Clippert was chairman of the ladies' reception committee on which there were 50 members.

THURSDAY MORNING'S SESSION

Instead of following the good old custom of "Saving the best for the last," the paper which was voted the most valuable of the convention, was given first place on the program Thursday morning. This paper on "Kiln Band Expansion and Bracing" was by Carl P. Harrop, E. M., Assistant Professor of Ceramic Engineering, Ohio State University. Owing to the large number of illustrations which were shown in the form of lantern slides, it has been impossible to prepare this paper for this issue of "Brick and Clay Record," but it is confidently expected that it will be in form to be published in the March 16th issue. Several brickworks' engineers and superintendents took occasion to call at "Brick and Clay Record's" headquarters to register a request for the early publication of this paper, they saying that it was one of the strongest contributions to brick literature that had been made in years.

Professor Harrop was followed by an address delivered by Thos. E. Wilson, of the Pittsburgh (Pa.) Clay Products Company, who spoke on "The Other Fellow in the Brick Business." His paper follows:

The other fellow in the brick business should be one of our very best and most confidential friends. This other fellow in our business should also be worthy of our friendship and our confidence. However, before friendships can be formed and before confidence can be established we must necessarily become acquainted. Most of the enmity among men in any kind of business and throughout the world originated through misunderstandings, and that is why a great many brickmakers are not on good terms today. When men meet and discuss their differences they often find that their opinions are very much the same and, therefore, their misunderstandings soon vanish and ill feelings are changed to feelings of respect and sympathy. How necessary it is then, that men in the same line of business, especially in the brick business, should have a local organization where meetings are held at least once a month. At these meetings men gathered about the same table night after night become like one great family, where the interest of one is the interest of all. At these meetings men who heretofore criticised and found fault with each other personally, as well as with each other's methods of doing business, are surprised to find that their competitors are fine gen-



Will P. Blair



Frank B. Dunn



H. H. Macdonald

PROMINENT KNIGHTS OF GOOD ROADS



A BRICKMAKER'S HOME.
Residence of Charles F. Herrmann, Tell City, Ind., Who Was One of the Prominent Figures at the Convention

tlemen and that their interests were conflicting because they didn't know any better. These men soon become firm friends, if they are at all congenial, because they soon discover that their interests are one and the same.

You will pardon me, if in this connection I refer to our Pennsylvania Clay Club of Pittsburgh, which was organized a little more than two years ago with seven members. We now have a membership of twenty-nine or thirty, and at each monthly meeting a large percentage of the members are present, although many have quite a distance to come. When our club was first formed I was astonished to see that all, or nearly all, were strangers waiting to be introduced to men who had been in the same business, in the same locality, for a number of years. The reason they had not become acquainted before was because they had considered each other enemies, and apparently each brickmaker had felt it his bounden duty to put his competitor out of business. In fact some had put their competitors out of business but in so doing they had practically put themelves down and out also.

The public generally believes that anyone can run a brick plant, but those who have had some experience in the business believe that the man who can run a brick plant successfully can run almost anything else. It is an old saying that "competition is the life of trade," but if you are competing with someone who is working simply for the good of his health, or with someone who has no idea what his product is costing him and who listens to the owner or contractor who tells him how cheaply brick can be made, your chance of success in business is just about as good as the chance of the sick man of whom it was reported that he was on his death bed. The friends, as well as the physician, had been summoned, and as they gathered about the bed side, the doctor felt his patient's pulse, put his ear to his heart and said, "The man is dead." The man, overhearing the remark, replied, "That is not so." Whereupon the wife, with her accustomed gesture of authority, exclaimed, "You shut up—the doctor knows."

Such competition no one can endure, but fair and intelligent competition, where the manufacturers actually know what enters into the cost of their product and will insist on getting a fair margin of profit will injure no one. It will not even injure the contractor unless he has taken the work below cost, trusting in his ability to get the manufacturer to cut prices to help him out of his predicament and fails as he should do when he gets his contract in that manner.

One of the chief reasons why there has been so little profit in the brick business and so many failures, especially in the common brick business, is because of ignorance of the real cost of production. We know from observation and experience where men have made and sold brick at 50 cents to $1.00 per M. below actual cost, and imagined at the same time that they were making money. One way in which they lose money apparently without realizing it, is by making brick almost as large as a paving block, for which they receive no more per M. than the man making standard size brick. To make this large size brick takes more material, more kiln room, more fuel and more freight to carry it to destination. Also the number of brick required on any job in the territory where such a plant is located is greatly reduced. One of the members of our Pennsylvania Clay Club wants to give someone a fine present for inducing him to join our organization for it was there that he was persuaded to reduce his brick to standard size. This reduction in size he says saved him in freight alone $300 per month, and also saved more than 10% in material, kiln room and fuel.

One of the conditions of membership in our Club is that standard size brick will be made. At first some of the manufacturers were fearful lest the owner or the contractor to whom they had been selling would refuse to buy their brick because it had been reduced in size, but that trouble like most of our troubles, was only "psychological." In fact, contractors have told us that they were glad a uniform size brick had been adopted, for they know now on just what to figure, and do not waste any time after getting a contract running around hunting, for the largest brick made in the community.

We have also discussed so thoroughly the items that enter in the cost of production, including depreciation of plant, that prices have been advanced materially, for men as a rule in any business, will not sell at less than cost when they know it, unless they be like the man who kept buying eggs at 30c per dozen and selling at 25c per dozen, and when asked how he could afford to do such kind of business replied, "He could not afford to do it except that he did such a large business."

At our meetings we have also had talks given on the best and most efficient kinds of kilns, on the cheapest and most dependable power, on the most economical methods of drying and burning and, in fact, on everything relating to the brick business. Hence, we all feel a great deal wiser concerning our business than we did two years ago, and we hope to learn still more—not only from the present membership but from others who will unite with us. The larger the membership in our organization the better, for from a great number we ought to learn more by comparison and also by having it told to us.



Anthony Ittner Listening to a Good Story

You should never hesitate to listen to the experiences and opinions of the other fellow, for by so doing you may be able to render him valuable assistance and at the same time gain useful information for yourself. A good listener is usually a wise man. I need not tell you the wisest man that ever lived. His name is familiar to all. I am not asserting why this man Solomon was so wise but I have heard it affirmed that he was so filled with knowledge because he had to listen and because he had seven hundred wives to tell it to him.

So I would recommend that the brickmakers of every district should organize a club and meet at least once a month, get the advantage of the other fellow's experience, render each other all the help possible, so that every one in the business may prosper, for when your competitor thrives you will make money also. Furthermore, these meetings will prove beneficial because you can know exactly the condition of the market in your district, the number of brick on hand and not sold, who has more orders than he can fill (none such now) and who is in need of orders.

By working together for mutual good, no petty differences will arise, but honesty and justice in our dealings with each other will be established, better brick will be made without increasing the cost, better service will be rendered to the public, and our business will assume a much higher standard among the industries of the country.

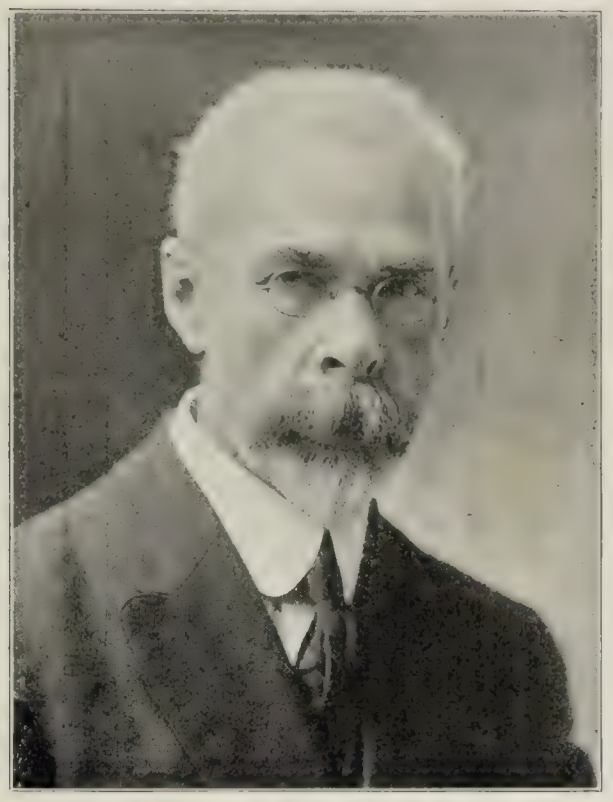
Owing to the unavoidable absence of Robert C. Mitchell, salesmanager of the Farr Brick Company, of Cleveland, Ohio, his paper, "The Up-to-Date Method of Boosting the



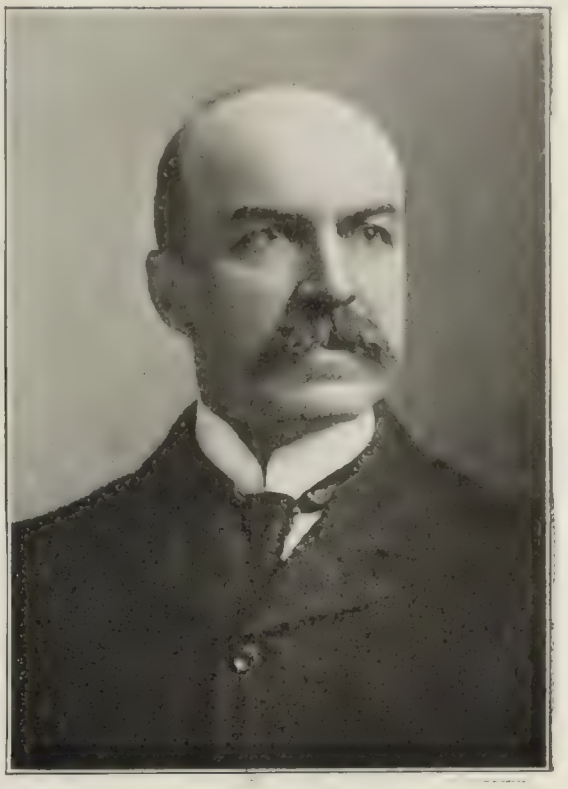
Ford Motor Company's Plant at Detroit Where a Large Party of Brickmakers Received Pointers in Efficiency



JOHN H. MEAD,
of Warners, N. Y.



CHARLES F. BINNS, M. Sc.,
Who Will Organize New York State Association of Clay Products Manufacturers and Ceramists



R. D. EISENHART,
of Horseheads, N. Y.

Brick Game," was read by Secretary Randall. This paper found a ready response in the hearts of those who listened to it, for it showed how, by the application of the simplest kind of merchandising methods, the Farr Brick Company had been able to raise the price of its material by more than ten per cent and to maintain that price in the face of strong competition. Particularly at the point where Mr. Mitchell said (or wrote) that his salesmen were instructed to refuse all orders offered at the "other fellow's" price and that no orders were booked excepting those that were taken at a figure that was above the average market price for similar material, the audience grew enthusiastic. This paper expressed in very simple and forceful language the thought that afterward dominated the convention—that brick prices could be improved despite competition, if brick were advertised as it should be.

Robert Spencer, Jr., of the firm of Spencer and Powers, architects, delivered an address on "Modern Brick Architecture," illustrated in the beginning by plat plans, elevations and floor plans of the model, modern, low cost, fire resistant residence that is being erected by the clay products industry at the Panama-Pacific International Exposition. He explained in detail the finer points of this house—how it had been made fire resistant without any appreciable addition to its cost, and how the arrangement of rooms was economical and construction costs reduced at various points without detracting from the artistic excellence or the comfort of the house. He made one very remarkable statement, since it came from an architect of undoubtedly high standing and this was that architects, as a whole, did not object to the distribution of plans, pointing to the fact that various mail order houses and "mail order architects" as well as certain magazines that had a leaning toward cheap construction, were distributing large numbers of "canned plans" all of which called for the flimsiest kind of buildings. He urged the brick interests to meet this dangerous competition by providing a way of distributing plans for small brick houses. He warned them, however, against adopting plans that would provide for the building of unattractive and inartistic houses, saying that this would hurt the brick business more than it would assist it.

Another point that was brought forward in his "talk" was that very few people understood what a great advance there had been in the cost of building, during the past ten or fifteen years. He said that this added cost was just as marked in frame construction as it was in masonry, and told of the clients who came to the architects' offices with little sketches made, perhaps, from pictures which they had found in magazines and elsewhere, showing the kind of a house that they desired to build. Frequently, he said, these people had from three to five thousand dollars to spend, but their ideas of the kind of house they wanted, called for the expenditure of double the amount. This was due, he said, in great measure, to the fact that many of our most admired houses were built ten or more years ago and that the newcomers in securing their ideas of cost, were guided by the expenditure necessary at the time when building materials and building labor were much lower than at present.

He laid stress upon the fact that when a brickmaker or brick salesman was told that masonry construction was "out of the question" on account of the small amount of money which the prospective builder had to spend, it would be well for the brickman to inquire as to whether this prospective builder was absolutely sure that he could secure frame construction for the amount upon which he had figured. He said that frequently the carpenter contractor would say that the house could not be built for a certain amount in brick and, at the same time, would refuse to guarantee to build it in frame and keep within the amount which the prospective builder possessed.

This opens a new line of thought to the brickman and a new point of attack. If frame construction has risen in cost as much as Mr. Spencer claims, then it is always well to ask, in case the prospective builder "goes to frame because he cannot afford brick" whether he has carefully considered if he can afford frame, and as to how he has safe-guarded himself against the onslaught of the deadly "extra."

Following Mr. Spencer's paper, which was illustrated with a large number of lantern slides, Herman L. Matz, President of the Panama-Pacific Clay Products Association, made a strong presentation of the claims of a little body of men who have, with but little support, built a house at the San Francisco Exposition, which will speak to many millions of people, telling them the story of brick construction. He was followed by Wm. P. Varney of Chicago, who pointed to the immense advertising value of the work that is being done by the Panama-Pacific Clay Products Association.



A. B. Luten, of Toledo, Ohio.



A. C. Ochs, of Springfield, Minn.



Glenn V. Cathey, of Detroit, Mich.

THREE NOTABLE VISITORS AT THE CONVENTION

When the convention was called to order for the afternoon session of the 18th, the chairman announced that the two vacancies on the Committee on Technical Investigation, would not be filled until either later in convention week or perhaps some weeks thereafter—this at the discretion of the executive committee. A number of suggestions have been made as to the men best fitted to serve upon this committee, and it is hoped that the new appointees will be men who combine the faculty of doing things with the knowledge that is necessary to make them worthy associates of the present incumbents.

THURSDAY AFTERNOON'S SESSION

J. F. Griffiths, of the Bureau of Standards at Pittsburgh, Pa., read the first paper delivered at this session. It was entitled "The Testing of Large Brick Piers" and was illustrated with lantern slides. This paper made a deep impression. Very few of the delegates understand the character of the work which is being carried on under government supervision and brickmakers are to be congratulated that this Bureau is turning its attention to the testing of clay products and so giving standards that must necessarily be very high. For many years the very "newness" of cement concrete has made its study an interesting one for scientific men and as a consequence, technical journals have been filled with research articles regarding cement construction. In the meantime brick has been accepted as standard and so long as "a brick is a brick" it represented the higher marks in the standardization of building materials.

This was satisfactory so far as it went, but when it came to meeting the extravagant claims of men making substitute materials, it was found that the history of brick, while interesting, was not authenticated by government records.

Now that the government is more actively interesting itself in brick and brickwork, interests that are competitive to brick will be met by statistics that are beyond question.

J. W. Robb, manager of the Clinton Paving Brick Company, of Clinton, Ind., followed with a very interesting paper on the "Modern Methods of Controlling Kiln Temperatures" in which he described the manner in which a pyrometer installation had been made upon his plant. It was a practical brickman's statement of a practical system and its effects were immediately apparent in the increased number of inquiries made to the various manufacturers of pyrometers who had exhibits at the convention.

"Brick and Clay Record" hopes to publish Mr. Robb's paper in a near subsequent issue.

The two papers mentioned were the only ones that were read Thursday afternoon, the session being shortened in order that the delegates might have an opportunity of "dolling up" for the banquet which was scheduled for that evening.

THE BANQUET

The State Banquet Hall at the new Hotel Statler in Detroit is a marvel of beauty. Its walls are of the soft cream-buff shade and texture of Caen stone, relieved by Corinthian pilasters in pure white, the window draperies being in a deep rich red shading. The chandeliers of prism-cut glass that rival in beauty those installed in the White House at Washington and woodwork, in mahogany shading rubbed down to a wax finish, add the note of luxury that makes this room notable.

It has been said that this N. B. M. A. convention, while not as large in point of attendance as some that have gone before it, was a "quality" convention and this was clearly shown in the large percentage of the fair sex present and the magnificence of the gowns worn. Almost without exception, the men wore the "conventional black" and when the Reverend Doctor Sayre had finished asking the blessing and the party was seated, a look at the speakers' table gave promise of a most interesting evening. When, following this, a second glance was given to the menu, everyone knew that the "inner" man (and woman) would have a gastronomic feast as well as one somewhat oratorical.

The dinner was enlivened by choral effects produced mainly by the diners but led by Harold Jarvis, the man with the voice of gold, this—with one or two exceptions which will be noted later.

The words of these songs, which were published in a "cut out" booklet in the form of a common brick, were distributed with the compliments of the Detroit Reception Committee and were composed for the main part by H. Campbell and V. Tucker, men who understand the ups and downs of the brick business.

The words of the choruses which have to do with brick and brick selling are published on another page of this magazine and may serve other organizations that care to go in for similar musical "stunts."

It was mentioned that Harold Jarvis led most of the sing-



R. T. Stull, of Urbana, Ill.



M. E. Gregory,
of Corning, N. Y.



William Carpenter, of Detroit, Mich.

AMONG THOSE WHO REGISTERED AT THE CONVENTION

ing, but to this there were one or two exceptions, notably when Secretary Randall called upon Herman Matz, of Chicago, a well known Heidelberg graduate, to lead in singing "It's a Long Way to Tipperary" and despite the fact that our well beloved Herman has already lost a small fortune in bets based upon the early termination of the European fraças, he was good sport enough to stand up and deliver. As one of the best supporters of the Symphony Orchestra, Mr. Matz is a good judge of music, pitch, key and harmony and there is no doubt but that the enthusiasm with which the banqueters rendered the famous marching song of the British regiments was due in large part to the generous neutrality of the president of the Panama-Pacific Clay Products Association.

Speaking of neutrality, it was fitting that immediately following the applause with which the diners greeted Mr. Matz' effort (and their own) that the band should play "Die Wacht am Rhine" which, it is said, brought tears to the eyes of Professors Orton and Bleininger who, standing at salute during the rendition of the German national anthem, shook hands across the linen covered chasm for several seconds after all others had been seated.

To go back to the beginning, it is well to note that George H. Clippert, newly elected third vice-president of the N. B. M. A., presided at the banquet and having made a short introductory speech, gave place to the Honorable Alex J. Grosbeck, the toastmaster of the evening.

Having cracked the time-honored chestnut regarding the toastmaster's privilege and duty, being along the line of making his own speeches brief and so setting an example for those who followed him, Mr. Grosbeck announced that arrangements had been made so that dancing would be permitted in the banquet hall after the speeches and other various forms of entertainment had been seen and heard.

This announcement met with considerable enthusiasm and while the applause was given, for the main part, by pairs of small hands kid encased, it nevertheless "came from the heart" as it were. Having received the "freedom of the city" from a worthy representative of the mayor of Detroit, and therefore, feeling free to go and come as they wished, the diners settled back to listen to Miss Mary Lyon, a monologist of considerable talent. Miss Lyon gave a very pleasurable rendering of Edgar A. Guests' poem "Guiseppi, He Works at the Ford," and followed this with an expose of the secrets of Free Masonry which caused many of the workmen in the temple to gasp, knowing as they did that if Miss Lyon possessed all this inner knowledge, it must be more or less public property.

Judge A. J. Murphy then spoke on the "Conquests of Commerce," and since he had a wide subject and a still untired audience, was able to hold it enthralled by his eloquence for a rather long time. It was noted that some of the debutantes present and the young men in attendance upon them, as well as their chaperons, grew restless here and there—this in remembrance of the announcement that there was to be dancing—later. But commerce conquered in the end and Judge Murphy earned the generous applause which came to him at the completion of his able address.

The Reverend Wm. S. Sayre replying to the toast "Is a Minister a Brick" took the affirmative side and made out a good case. He struggled for a time to assign the proper feminine to the masculine noun "brick" and it is still a question, among those who heard him, as to whether brickmakers' wives and daughters are "brickesses" (they objecting to the term briquettes on account of the diminutive size) and no one seemed inclined to stand, for a moment, for the suggestion that brickmakers' children be known as "brick-brats."

J. U. Higgenbothan—the famous "J. U. H." who has figured in the Chicago Tribune's "line-o'-type" and in many other columns devoted to the lighter side of life, furnished the real "Dinner Table Chatter" of the evening. He told stories (that were new) and recited poetry (that was good), his wit scintillating with diamond-like flashes that brought laughter from every man, woman and waiter present. He was, beyond question, the "hit" of the evening.

Between whiles, Harold Jarvis sang. It was remarkable that Detroit, being on the frontier as it were—one of the uttermost limits of these United States—and almost touching Canada, would naturally sympathize with the allies. It was remarkable, however, that the banqueters, drawn as they were from all parts of the country, followed the lead of the Detroiters and Harold Jarvis' songs that were, to a great extent pro-British, found a ready response. In point of fact, everything that he sang was well sung and well received, but the audience seemed to be equally well disposed toward "My Own United States" and "We Just Came Up from



Robert C. Mitchell Floyd E. Waite Ralph P. Stoddard

PROMINENT "BOOSTERS" FOR THE SOCIETY ADVOCATING FIRE ELIMINATION

Somerset"—the latter a story of the meeting of an Englishman, his wife and boy with their king and queen.

Gordon C. Keith, secretary of the Canadian National Clay Products Association, was unavoidably absent and in his stead, A. F. Greaves-Walker, vice-president of the Canadian body, replied to the toast "Roses and Thistles." Having mentioned that he would have preferred to reply to "The Mapleleaf" he made the statement that the Canadian government had pinned 92,000 bronze mapleleaf badges on as many men who had enlisted and who have been sent, or would go to join their brothers in the European conflict. In some way or other Mr. Greaves-Walker had heard of the intention of the American Face Brick Association to hold a midsummer convention and rumors have it that this convention is to be held at Niagara Falls. Seizing this as an opportunity to extend the "hands across the sea" feeling, Mr. Greaves-Walker entered a strong plea for the addition of the word "Ontario" after "Niagara Falls" and suggested that it would only be an extra ten cents per man to go across the International bridge. He offered to these brickmakers the hospitality of Canada and impressed upon them the welcome that they would receive if, coming as they did from "the States" to hold a convention across the border, they would be building a brick wall of friendship (rather than cementing it) between the Canadian brickmakers and themselves.

Edgar A. Guest, a native poet of considerable reputation and undoubted talent, introduced himself and his poems in a well rendered address and also recited several of his best compositions. It is hard to say which of these gave the most pleasure—he ran the gamut from grave to gay—perhaps the former being typified by the lines which had to do with the German soldier who, being buried where he fell, was represented by the "little brass check" that came back to his home town. The gay side was manifested in a poem which was a supplement to the one which Miss Lyon had recited relative to "Guiseppi" and his well paying position at the Ford. In this supplement Mr. Guest told of the dejection which followed "Guiseppi's" being laid off.

It was well past midnight when the last speech had been spoken and the last song sung, but this did not stay the energies of the dancing men when they were called upon to push aside the tables and make room for the tripping of the light fantastic. It has been mentioned that the delegates and the ladies who accompanied them came from all four corners and many parts of the interior of the country and, as a consequence, since the "modern dances" in vogue today are obsolete tomorrow, the various styles of dancing the steps that have followed the tango, maxixe and other importations were various and startling. The music, however, was excellent and there is no doubt but that this part of the evening's entertainment repaid the long waiting.

FRIDAY'S INSPECTION TRIP

Spring weather and sunny skies marked the morning of the closing convention day, which, according to announcements made the previous evening, would be devoted to a railroad trip to the George H. Clippert & Brothers' brick plant, and through the Ford automobile factory.

This trip was a "personally conducted" one, being in charge of "Will" Wreford and Charles H. Bryan. A special "brickmakers' train" waited at the Michigan Central depot, and many mysterious bundles were taken aboard by the committee in charge. These afterward disgorged miniature boxes of chocolates and bon-bons, and full sized boxes of cigars, all of which were given a warm welcome by the "tourists."

A full description of this trip, together with pictures of the plants passed and visited, will be published in the March 16 issue, together with the group picture of the party photographed on the terrace of the Ford Motor Car Company's office building.

FRIDAY AFTERNOON'S SESSION

On account of the lateness of the return of the party that made the "inspection trip" in the forenoon, the afternoon session was necessarily short, the only paper read being that of J. L. Buckley, of Aledo, Ill., a description of which was given in the Feb. 16 issue of "Brick and Clay Record." This is the same paper that was read by Mr. Buckley at the convention of the Illinois Clay Products Manufacturers' Association, at Springfield, Ill., earlier in the month. This paper, with the diagrams that accompanied it, will serve as the basis of an article which, it is hoped, will be printed for the benefit of our readers within a few weeks.

Resolutions of thanks to the Detroit brickmakers, and in connection with the demise of D. V. Purington, one of the ex-presidents of the association, were read and adopted, and the convention adjourned.

Contrary to the custom established at French Lick, Ind., where the American Face Brick Association and the Face Brick Dealers' Association let little buttons mark the delegates, the Detroit convention was muchly decorated. In addition to the "official" numbered badge, whereby delegates and guests could be identified (through the simple expedient of referring to the numbered roster) the light blue badge of the American Ceramic Society was much in evidence.

Between the two was the blue enamel and gold, triangular badge that was distributed as a souvenir by "Brick and Clay Record." This badge, as may be seen in the illustration, was suspended from a gold plated bar which bore the words "N. B. M. A. Convention—Detroit, 1915," and contained the three great clay slogans—"Build with Brick for Beauty and Economy," "Pave with Brick for Dependable Highways" and "Tile Your Farm with Everlasting Burned Clay." In the center, as a noonday sun, were the ray enclosed words "Best by Time's Test." Modesty forbids the translation of the three initials that formed the points. They are B. C. R. and stand for the brick man's guide, mentor and friend.

During the early part of the convention, the white ribbon, inscribed "A Knight of Good Roads" was worn by those who believed in brick-paved highways, and since creosote-block, macadam and concrete road men were not present in any great numbers, the vote, as indicated by the ribbons, was unanimous.

The badges of the St. Louis "boosters," who came to induce the executive committee to select the Missouri metropolis as the next meeting place, were very popular. They were ornamented with a green, metal "locust" and a slight pressure where it did the most good made a sound like a telegraph relay. As a consequence, St. Louis advocates made a great deal of noise at the convention, and if early in 1916, the brick manufacturers wend their way to the banks of the Mississippi, it will be to the credit of the "locusts" and the men who distributed them.

In this connection it is well to say that St. Louis was not the only city that put forth claims to hospitality. Dayton, Ohio, lately flood-washed, made a strong plea. Cincinnati had its advocates, and they promised to do great things for and to the brick men, if they would come to the home of Nicholas Longworth and his Rooseveltian bride. Atlantic City made a strong, but unavailing "play" to register the convention and so "cinch" the 1916 convention, and Cleveland, while opening its arms, admitted its chances slight, on account of its being so close to Detroit.

So the badges did their part to add interest to the convention, and, as "Charlie" Harris, at home in a brick convention, although bound body, soul and breeches to hollow-tile, said, "We all look like German generals after a Belgian victory."

Many of our friends have told us (and we are inclined to believe them) that "Brick and Clay Record's" souvenir, in the form of a convention badge, with accompanying strap to transform it into a watch-fob, was a "trophy" they would highly value. In the first place, it had an undoubted artistic excellence, and again, it served to bring out a point that has not been dwelt upon as strongly, in past, as it should have been. That is, that "Building with Brick" insures the *beauty*, as well as the *economy* of the building operation. This thought was foremost in the mind of the designer, who believes that the beauty of brick should be given equal emphasis with its cost-saving features. The "medal" was finished in king's blue enamel and gold, and duplicated "Brick and Clay Record's" triple slogan, "Build with Brick"—"Pave with Brick"—"Tile your Farm." It is expected that it will be worn as a watch-fob for some time to come, as it will, in many cases, start a conversation with prospective buyers of material, each of whom will be impressed by its terse way of "telling the story of burned clay."

BRICK AND CLAY RECORD'S HEADQUARTERS

This magazine "sprung" an innovation on the convention, by renting one of the larger rooms on the 14th floor of the Hotel Statler, where it displayed sixteen 28 in. by 40 in. charts, giving data on building construction, association work, material production by years, comparative costs, comparative values, and other interesting information that impressed visitors with the fact that the information given them in "Brick and Clay Record" is based on an exhaustive study of statistics. In response to many requests, these charts will be reproduced in succeeding issues of this journal.

More than three hundred convention visitors called at these headquarters during the week of February 15-20, and went away decorated with the blue enamel triangular badge. The



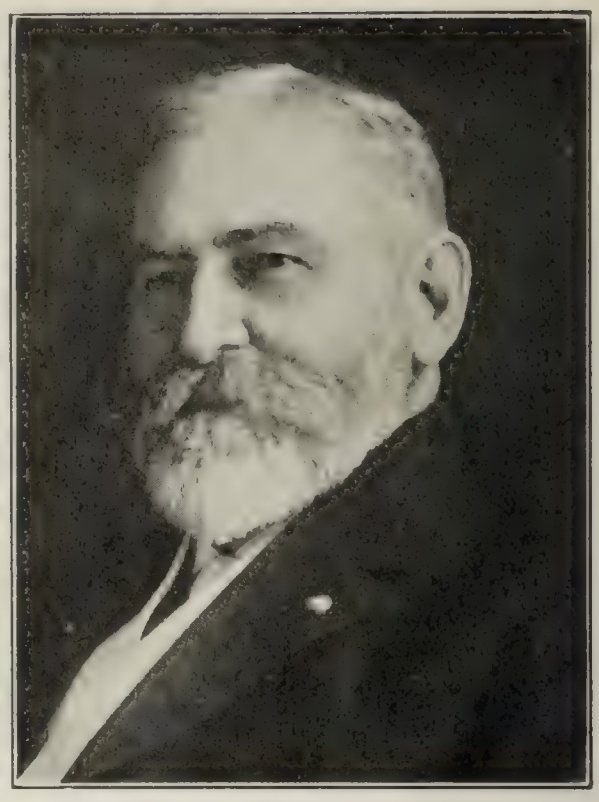
THREE OF THE "COMMITTEE OF TEN" WHICH WILL WORK FOR GREATER BRICK PUBLICITY
At the Left Is Thomas A. Wilson, of Pittsburgh, Pa., the Center Picture Being That of Warren Ittner, of St. Louis, Mo., and the Right Is William Hanley, of Bradford, Pa., President of the Building Brick Association of America.



J. C. McCANNELL.
One of the Canadian Contingent and a Consistent Brick "Booster."



J. W. ROBB,
Who Described the Pyrometer Installation at His Plant in Clinton, Ind.



CHARLES A. BLOOMFIELD,
Who Tried to Stampede the Convention For Atlantic City, N. J.

great majority spent enough time to study the statistical charts, and to become better acquainted with "Brick and Clay Record's" staff, represented by Harold H. Rosenberg, vice-president and general manager, Frederic W. Donahoe, editor-in-chief; David B. Gibson, advertising manager; C. O. Arbogust, Cr. E., associate editor, and Irwin W. Preetorius, freight traffic counsellor. To many of our readers, the "staff" had been but a series of names, but this occasion gave them an opportunity of meeting the men behind "Brick and Clay Record" face to face.

From this headquarters, the special "Detroit Edition" of this magazine was distributed. Going to press Monday night, the 15th, it was ready for shipment the day following, going to the "City where life is worth living" Tuesday afternoon. This special edition was printed on extra heavy enamel stock, and bronze green duotone ink was used, making the inside pages as attractive as those of the top-notch national magazines, with circulations that range in the millions. These, enclosed in envelopes that bore the words "We thought you might miss us—bein' away from home," were sent to the rooms of all conventioners who were registered at the Hotel Statler. Extra copies were given to all who called at the headquarters, or at the stand that was assigned to "Brick and Clay Record" in "Machinery Hall," back of the convention meeting room. It was fitting that this edition should be one in which the "Edison Fire" story was given a new "angle," as our newspaper friends say. It was something, also, in the nature of prophesy, that it contained an article stating that the convention would be one of buyers, for reports from machinery and equipment concerns are a unit in saying that this convention beat all prior gatherings, in the number of inquiries, the number of men who came forward with the information that they were "in the market" for better appliances with which to make their ware.

The Roster of the N. B. M. A. Convention

1. **C. P. Mayer**—C. P. Mayer Brick Co., Bridgeville, Pa.
2. **Eben Rodgers**—Alton Brick Co., Alton, Ill.
3. **W. H. H. Rogers**—Rochester Brick & Tile Co., Rochester, N. Y.
4. **C. H. Bryan**—Mercier, Bryan, Larkins Brick Co., Detroit, Mich.
5. **Will P. Blair**—National Paving Brick Mfrs. Assn., Cleveland, Ohio.
6. **George H. Clippert**—George H. Clippert & Bros. Brick Co., Detroit, Mich.
7. **James E. Randall**—T. A. Randall & Co., Indianapolis, Ind.
8. **Charles F. Clippert**—George H. Clippert & Bros. Brick Co., Detroit, Mich.
9. **H. F. Clippert**,—George H. Clippert & Bros. Brick Co., Detroit, Mich.
10. **William B. Wreford**—Detroit Brick Mfrs. & Dealers' Assn., Detroit, Mich.
11. **Theodore A. Randall**—Secty. N. B. M. Assn., Indianapolis, Ind.
12. **William Simpson**—Frost Manufacturing Co., Chicago, Ill.
13. **Charles A. Bloomfield**—Bloomfield Clay Co., Metuchen, N. J.
14. **O. W. Wills** — Roessler - Hasslacher Chemical Co., Perth Amboy, N. J.
15. **Howard W. Bloomfield**—New Jersey Clay Products Co., Metuchen, N. J.
16. **Warener Malsch**—The Roessler-Hasslacher Chem. Co., N. Y.
18. **Christopher Steadman**—Steadman & Robinson Co., N. Y.
19. **Hubert Comers**—Somers Brick Co., Atlantic City, N. J.
20. **B. C. Pierce**—Presbrey Stove Lining Co., Taunton, Mass.
21. **Lawrence B. Koblitz**—Amer. Building Brick Co., Cleveland, O.
22. **A. W. Aylesworth**—The Bonnot Co., Canton, Ohio.
23. **George B. Mentz**—Walkill, N. Y.
24. **Colby M. Avery**—Stephens-Adamson Mfg. Co., Aurora, Ill.
25. **Charles T. Harris**—Hollow Bldg. Tile Mfrs.' Assn., Cleveland, Ohio.
26. **H. H. Rosenberg**—Brick & Clay Record, Chicago, Ill.
27. **W. A. Meddick**—The Lakewood Engineering Co., Cleveland, O.
28. **A. J. Dunn**—Chase Foundry & Mfg. Co., Columbus, Ohio.
29. **John M. Pierce**—Marsh-Capron Co., Chicago, Ill.
30. **R. C. Penfield**—American Clay Machinery Co., New York, N. Y.
31. **J. Preston Penfield**—Amer. Clay Mach. Co., New York, N. Y.
32. **H. C. Penfield**—American Clay Machinery Co., Bucyrus, O.
33. **L. W. Penfield**—Amer. Clay Machinery Co., Willoughby, O.
34. **J. A. Penfield**—Amer. Clay Machinery Co., Willoughby, O.
35. **R. O. Perrott**—American Clay Machinery Co., Bucyrus, O.
36. **C. B. Sharer**—American Clay Machinery Co., Bucyrus, O.
37. **F. L. Hopley**—American Clay Machinery Co., Bucyrus, O.
38. **Davis Brown**—American Clay Machinery Co., Bucyrus, O.
39. **L. Haigh**—American Clay Machinery Co., Bucyrus, O.
40. **W. R. Cunningham**—Amer. Clay Machinery Co., Bucyrus, O.
41. **E. W. Dow**—American Clay Machinery Co., Pittsburgh, Pa.
42. **F. N. Shankland**—Amer. Clay Machinery Co., Willoughby, O.
43. **H. S. Simpson**—American Clay Machinery Co., Chicago, Ill.
44. **Jas. P. Martin**—American Clay Machinery Co., Lancaster, Pa.
45. **Fred Talbot** — Laclede Christy Clay Products Co., St. Louis, Mo.
46. **Abel Hansen**—Fords Porcelain Works, Perth Amboy, N. J.
47. **J. H. Chambers**—Chambers Bros. Co., Philadelphia, Pa.
48. **A. R. Root**—Chambers Bros. Co., Philadelphia, Pa.
49. **Wm. G. Taylor, Jr.**—Chambers Bros. Co., Philadelphia, Pa.
50. **R. W. Newcomb**—Charles Engelhard, New York City.
51. **P. W. A. Fitzsimmons**—H. Brewer & Co., Tecumseh, Mich.
52. **Charles Burridge**—H. Brewer & Co., Tecumseh, Mich.

(Continued on page 447)



F. B. Holmes



G. S. Totten



Ralph Spencer

DETROIT BRICK DEALERS WHO HELPED ENTERTAIN THE DELEGATES

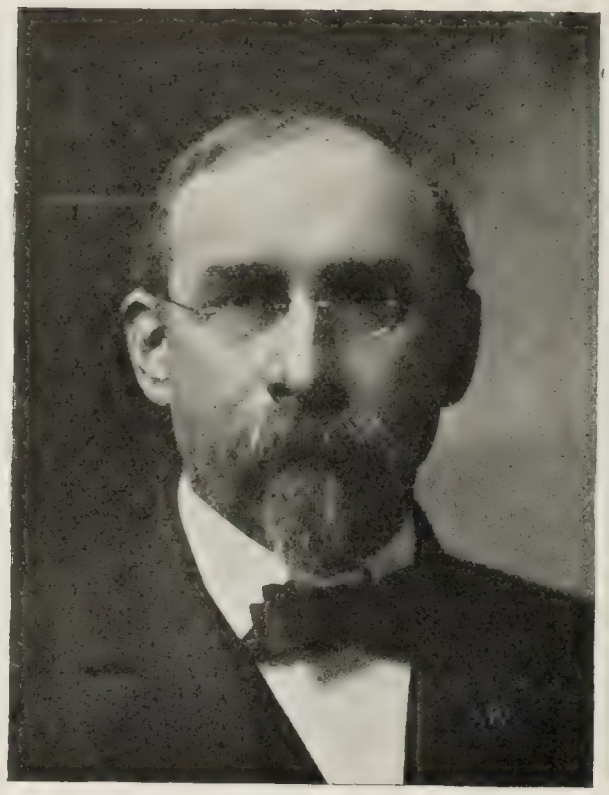
N. B. M. A. Roster (Continued)

53. H. R. Brewer—H. Brewer & Co., Tecumseh, Mich.
54. G. S. Brubaker—H. Brewer & Co., Tecumseh, Mich.
55. W. R. Barnhart, Jr.—The Wooster Shale Br. Co., Wooster.
56. S. C. Peebles—The Peebles Paving Br. Co., Portsmouth, Ohio.
57. F. L. Manning—Peebles Paving Br. Co., Portsmouth, Ohio.
58. C. C. Barr—The Barr Clay Co., Streator, Ill.
59. Charles J. Deckman — The Deckman-Duty Br. Co., Cleveland, O.
60. F. M. Brady—Cleveland Br. & Clay Co., Cleveland, O.
61. W. T. Blackburn—Dunn-Wire-Cut Lug Co., Paris, Ill.
62. L. K. Brown—The Burton Townsend Co., Zanesville, O.
63. David B. Gibson—Brick & Clay Record, Chicago, Ill.
64. D. R. Potter—Thornton Fire Brick Co., Clarksburg, W. Va.
65. Chas. H. Frank—Nelsonville Brick Co., Columbus, O.
66. R. C. Smith—American Blower Co., Detroit, Mich.
67. Harry L. Cox—The Marion Steam Shovel Co., Marion, O.
68. J. B. Wilcox—The Alliance Clay Prod. Co., Alliance, O.
69. J. W. Robb—Clinton Paving Brick Co., Clinton, Ind.
70. Marion W. Blair—Kushequa Brick Co., Kushequa, Pa.
71. H. H. Fate—The J. D. Fate Co., Plymouth, O.
72. G. A. Anderson—The J. D. Fate Co., Plymouth, O.
73. E. M. Hall—Davenport Locomotive Wks., Chicago, Ill.
74. A. S. Reid—A. S. Reid & Co., Newark, N. J.
75. Richard P. Brown—Brown Instrument Co., Philadelphia, Pa.
76. J. W. Lazear—Brown Instrument Co., Philadelphia, Pa.
77. G. L. Clapper—Brown Instrument Co., Philadelphia, Pa.
78. Ellis Lovejoy — Richardson - Lovejoy Eng. Co., Columbus, O.
79. Bert. J. Graham—The Dennison Tile Eng. Co., Cleveland, O.
80. Herschel H. Macdonald—Natl. Paving Br. Mfrs. Assn., Cleveland, O.
81. Alfred Jenkins—Det. Brick Mfrs. & Dealers' Assn., Detroit, Mich.
82. Harman Wirsching—The Standard Dry Kiln Co., Dayton, O.
83. E. DeGroot—Standard Dry Kiln Co., Indianapolis, Ind.
84. Robt. Elliott—Standard Dry Kiln Co., Indianapolis, Ind.
85. William Conway—Philadelphia, Pa.
86. B. F. Cotter—The Coshocton Brick Co., Coshocton, O.
87. P. J. Peterson—Caro, Mich.
88. John K. Simpson—The Trimble Pav. Br. Co., Dayton, O.
89. J. Addison Cromwell—James B. Cromwell & Son, Wallkill, N. Y.
90. F. B. Dunn—Dunn Wire-Cut-Lug Br. Co., Conneaut, O.
91. C. A. Gardner—American Enamel Br. & Tile Co., New York, N. Y.
92. Robert L. Frink—The Frink Pyrometer Co., Lancaster, O.
93. A. C. Bennett—White Star Refining Co., Detroit, Mich.
94. Forrest Fordham, Sr.—Bucyrus Co., Chicago, Ill.
95. Warren Griffiss—Baltimore Br. Co., Baltimore, Md.
96. J. Fred Smith—Omaha, Neb.
97. C. C. Blair—Bessemer Limestone Co., Youngstown, O.
98. Adolph F. Hottinger—No. West. Terra Cotta Co., Chicago, Ill.
99. A. A. Oldham—The Bonnot Co., Canton, Ohio.
100. R. H. McElroy—The C. W. Raymond Co., Dayton, O.
101. E. H. Morse—The C. W. Raymond Co., Dayton, O.
102. G. M. Raymond—The C. W. Raymond Co., Dayton, O.
103. E. G. Eisenhart—Horseheads, N. Y.
104. Anthony Ittner—Ittner Brick Co., St. Louis, Mo.
105. Earl C. Smith—The Marion-Osgood Co., Marion, O.
106. R. C. Bennett—Wellington Mach. Co., Wellington, O.
107. Herbert S. Hersey—C. O. Bartlett & Snow Co., Cleveland, O.
108. Arthur Dupuy—The C. O. Bartlett & Snow Co., Cleveland, O.
109. Ralph Spencer—Dresden Brick Co., Detroit, Mich.
110. A. Q. Starr—Wynn & Starr Co., Trafford, Pa.
111. Grafton E. Luce—Lambert Process Co., Chicago, Ill.
112. C. B. Thwing—Thwing Instrument Co., Philadelphia, Pa.
113. H. W. Holmes—Puritan Brick Co., Detroit, Mich.
114. B. E. Place—E. M. Freese & Co., Galion, O.
115. A. J. Freese—E. M. Freese & Co., Galion, O.
116. D. E. Humphrey — Deckman-Duty Brick Co., Cleveland, O.
117. I. C. Schaffer—Schaffer Eng. & Equipment Co., Tiffin, O.
118. C. J. Stevenson—The Stevenson Co., Wellsville, O.
119. Jotham Post—W. & J. Post, East Williston, N. Y.
120. Wm. Hanley—Bradford Pressed Br. Co., Bradford, Pa.
121. Wm. Hanley, Jr.—Bradford Fireproofing Co., Bradford, Pa.
122. H. J. Flood—Chisholm, Boyd & White, Chicago, Ill.
123. M. E. Gregory—Brick, Terra Cotta & Tile Co., Corning, N. Y.
124. L. W. Flood—Chisholm, Boyd & White, Chicago, Ill.
125. J. O. Trautwein—Trautwein Dryer & Engineering Co., Chicago, Ill.
126. Claude Smith—Claude Smith Co., Chicago, Ill.
127. R. D. Lindsay—Denver Pressed Br. Co., Denver, Colo.
128. A. J. Rogers—Fiske & Company, Inc., Boston.
129. D. D. Deeds — Thew Automatic Shovel Co., Lorain, O.
130. P. A. Smith—The A. F. Smith Co., New Brighton, Pa.
131. Elisha K. Kane—Kushequa Brick Co., Kushequa, Pa.
132. W. J. Snyder—Brazil Clay Co., Brazil, Ind.
133. A. F. Kleymeyer—West Point Br. & Lumber Co., West Point, Ky.
134. J. H. Mead—Onondaga Vitrified Br. Co., Warners, N. Y.
135. George J. Potts—C. & A. Potts Co., Indianapolis, Ind.
136. John E. Schuesler—Buffalo, N. Y.
137. John Dietschler—Bender Brick Co., Buffalo, N. Y.
139. John H. Qualman—Saginaw Paving Brick Co., Saginaw, Mich.
140. S. B. Dobbs—Philadelphia, Pa.
141. Fritz Salmen—Salmen Brick & Lumber Co., Slidell, La.
142. Wm. H. Bunce—Kane Brick Co., Kane, Pa.
143. S. Kelley—Arbuckle & Co., Rushville, Ind.
144. Frank McClellan — The Arnold-Creager Co., New London, O.
145. T. R. Kane—Michael Kane, Hartford, Conn.
146. Alfred Yates—Shawmut Paving Brick Co., Shawmut, Pa.
147. Ernest Yates—Eastern Terra Cotta Co., Boston, Mass.
148. E. C. Whitmyre—Diamond Power Specialty Co., Detroit, Mich.
149. W. D. Richardson—Claycraft Mining & Brick Co., Shawnee, O.
150. H. C. Adams—Danville Brick Co., Danville, Ill.
151. L. E. Rodgers—L. E. Rodgers Engineering Co., Chicago, Ill.
152. A. B. Meyer—A. B. Meyer & Co., Indianapolis, Ind.
153. James A. Pollak—Mathews Gravity Carrier Co., Detroit, Mich.
154. Wm. S. Dickover—Geo. T. Dickover & Son, Wilkesbarre, Pa.

(Continued on page 448)



W. K. Hammond, of Dutchess Junction, N. Y.



Charles M. Crook, of Catskill, N. Y.



C. E. Foster, of Binghamton, N. Y.

THREE NEW YORK BRICKMAKERS WHO WILL JOIN THE NEW ASSOCIATION

N. B. M. A. Roster (Continued)

155. George T. Dickover—Geo. T. Dickover & Son, Wilkesbarre, Pa.
156. George B. Waite—Geo. T. Dickover & Son, Parsons, Pa.
158. C. O. Evans—Warren Brick & Tile Co., Warren, O.
159. Ed. Flanders—The Marietta Shale Brick Co., Cleveland, O.
160. Francis O. Preston—Dover Fire Brick Co., Cleveland, O.
161. Wm. T. Bussell—Clay Product Co., Brazil, Ind.
162. A. V. Bleininger—Bureau of Standards, Pittsburg, Pa.
163. R. T. Stull—University of Illinois, Urbana, Ill.
164. A. C. Vicary—Ball Engine Co., Erie, Pa.
165. W. J. Stephani—O. W. Ketcham Terra Cotta Works, Philadelphia, Pa.
166. G. Veneklasen—Zeeland Brick Co., Zeeland, Mich.
167. H. C. Arnold—Ceramic Supply & Construction Co., Columbus, O.
168. H. Jason Knapp—Central Clay Products Co., No. Tonawanda, N. Y.
169. Robert A. Young—Marion Machinery Foundry & Supply Co., Marion, Ind.
170. Page A. Robinson—The American Architect, Chicago, Ill.
171. Wm. Clippert—Wm. Clippert Brick Mfg. Co., Detroit, Mich.
172. Geo. M. Krick—Krick-Tyndall & Co., Decatur, Ill.
173. P. L. Monroe—Providence, R. I.
174. Wm. L. Beltz—Mowrystown Brick & Tile Co., Mowrystown, Pa.
175. A. C. Ochs—A. C. Ochs Brick & Tile Co., Springfield, Minn.
176. H. C. Kleymeyer—Standard Brick Mfg. Co., Evansville, Ind.
177. Bernard Bigsby, Jr.—The Cleveland Alloys Co., Cleveland, O.
178. E. J. Schario—Keim Brick Co., Louisville, O.
179. R. D. McManigal—McManigal Gratelless Furnace Co., Logan, O.
180. A. R. D. Johnson—Johnson & Johnson Co., Raleigh, N. C.
181. F. R. Kanengeiser—Bessemer Limestone Co., Bessemer, Pa.
182. F. W. Donahoe—Brick and Clay Record, Chicago, Ill.
183. A. R. Campbell—Metuchen, N. J.
184. Chas. Bonner—Bonner and Marshall Brick Co., Chicago, Ill.
185. I. E. Brown—Adams Publishing Co., Alliance, O.
186. Robt. J. Dawson—The Cuyahoga Brick & Shale Co., Cleveland, O.
187. Jno. T. Hummert—Gem City Press Brick Co., Quincy, Ill.
188. John H. Miller—Washington Brick & Terra Cotta Co., Washington, D. C.
189. H. S. Bennett—The Wellington Machine Co., Welington, O.
190. Edward Orton, Jr.—Columbus, Ohio.
191. Carl B. Harrop—Ohio State University, Columbus, O.
192. R. F. Grady—St. Louis Terra Cotta Co., St. Louis, Mo.
193. William C. Black—Carter, Black & Ayers, New York City, N. Y.
194. Andrew A. Ayers—Carter, Black & Ayers, New York City, N. Y.
195. William Drayton—Hocking Valley Products Co., Shawnee, O.
196. I. M. Justice — The Manufacturers Equipment Co., Dayton, O.
197. W. H. Sachs — The Manufacturers Equipment Co., Dayton, O.
198. W. O. Fredenburg—Fredenburg & Lounsbury, New York City, N. Y.
199. R. C. Gangwere—Howard Park Brick Co., Chattanooga, Tenn.
200. W. P. Varney—Hydraulic-Press Brick Co., Chicago, Ill.
201. Harry R. Beegle—Beever Clay Mfg. Co., New Galilee, Pa.
202. Geo. J. Walters—Chatsworth, Ill.
203. Wm. Hammerschmidt—Lombard Brick & Tile Works, Lombard, Ill.
204. W. W. Wallace—American Clay Machinery Co., Chicago, Ill.
205. Wm. F. Bach—Bach Brick Co., Chicago, Ill.
206. W. G. Poate—Newport, Ky.
207. Thos. M. Wilson—Milton Brick Co., Milton, Pa.
208. Elton Braddock—Somers Brick Co., Atlantic City, N. J.
209. H. W. Carter—The Cook & Brown Lime Co., Oshkosh, Wis.
210. Lewis K. Brower—Brower & Best, Thompsonville, Conn.
211. J. W. Ball—Russell Shale Brick, Ltd., Russell, Ont., Can.
212. T. E. Wilson—Pittsburgh Clay Products Co., Pittsburgh, Pa.
213. Chas. W. Parker—Miss. Glass Co., St. Louis, Mo.
214. Frank J. Nixon—Paine & Nixon Co., Duluth, Minn.
215. Chas. C. Stratton — Alumina Shale Brick Co., Bradford, Pa.
216. O. Baird—H. Baird & Son Co., Park Hill, Ont., Can.
217. W. N. Durbin—Anderson Foundry & Machine Works, Anderson, Ind.
218. E. R. Dillehay—Dillehay Brick Co., Danville, Ky.
219. David T. Riffle—Allegheny Brick Co., Ltd., Pittsburgh, Pa.
220. B. H. Richards, Jr.—Richards Brick Co., Edwardsville, Ill.
221. Alva F. Gluck—Frontier Brick Works, Niagara Falls, N. Y.
222. G. W. McNees—Kittanning Clay Mfg. Co., Kittanning, Pa.
223. R. A. Bailey—Springfield Brick Co., Springfield, Mass.
224. Harold Copping—H. & B. Copping, Kankakee, Ill.
225. J. E. Frid—Geo. Frid Brick Co., Hamilton, Ont., Can.
226. Ned P. Elzey—The U. S. Roofing Tile Co., Parkersburg, W. Va.
227. Wm. Burgess—Don Valley Brick Works, Todmorden, Ont.
228. Thos. C. Moulding—Thos. Moulding Brick Co., Chicago, Ill.
229. A. A. McClamrock—The Wallace Mfg. Co., Frankford, Ind.
230. S. C. Martin—Kittanning Brick & Fire Clay Co., Pittsburgh, Pa.
231. Robt. S. Mitchell—The Farr Brick Co., Cleveland, O.
232. D. E. Reagan—Hocking Valley Products Co., Columbus, O.
233. Melville McC. Everhard—The Everhard Co., Massillon, O.
234. W. H. Gifford—Cleveland Builders' Supply Co., Cleveland, O.
235. A. R. Kuhlman—Ohio Brick Co., Toledo, O.
236. W. A. Howell—Collingwood Brick Co., Toledo, O.
237. C. E. Foster—Foster Paving Block Co., Bradford, Pa.
238. H. S. Hamilton—The McArthur Brick Co., McArthur, O.
239. C. H. Sill—McDonald Coal & Brick Co., Detroit, Mich.
240. H. P. Jenks—Hook Patent Kiln Co., Vigo, O.
241. C. F. Frank—Walker & Frank Brick Co., Detroit, Mich.
242. R. B. Henderson—Thomas Bros. Co., Ltd., Detroit, Mich.
243. James Day—Saginaw, Mich.
244. Ben S. Fisher—The Columbus Brick & Terra Cotta Co., Union Furnace, O.
245. R. D. Landrum—Harshaw, Fuller & Goodwin Co., Cleveland, O.
246. Geo. C. Videtto—American Pulverizer Co., East St. Louis, Ill.
248. A. P. Maurer—Metropolitan Brick Co., Canton, O.
249. J. G. Mamer—Mamer Brick Co., Benton Harbor, Mich.
250. Frank H. Wolf—The F. H. Wolf Brick Co., Detroit, Mich.
251. J. C. McCannell—Milton, Ont., Can.
252. Prof. Chas. F. Binns—N. Y. State School, Alfred, N. Y.
253. R. G. Nesch—Pittsburg Paving Brick Co., Pittsburg, Kans.
254. Robert. Nesch — Pittsburg Paving Brick Co., Kansas City, Mo.
255. W. J. Carmicheal—American Clay Machinery Co., Willoughby, O.
256. Jno. Newman—Indianapolis, Ind.
257. H. L. Matz—S. S. Kimball Brick Co., Chicago, Ill.

(Continued on page 449)



F. A. Hoiles, of the Alliance Brick Company, Alliance, Ohio, Refusing to Have His Picture Taken.

The Story of the Trip to the Detroit Brick Plants and the Ford Motor Co.

has been omitted from this issue, but will be published in in the issue of March 16.

Many of the snap-shots that were taken of the ladies of the party which made the trip, will be published at that time, together with a group picture.



President Mayer Receives Some Good Advice.

N. B. M. A. Roster (Continued)

258. Chas. F. Herrmann—U. S. Brick Co., Tell City, Ind.
259. H. J. Votaw—The J. D. Fate Co., Chicago, Ill.
260. Jno. T. Harrington—Twin City Brick Co., St. Paul, Minn.
261. E. E. Klooz—The Trumbull Brick Co., Youngstown, O.
262. J. Morley Zander—Jackson & Church Co., Saginaw, Mich.
263. W. F. Soisson—Jos. Soisson Fire Brick Co., Connellsville, Pa.
264. F. K. Borden, Jr.—Borden Brick & Tile Co., Goldsboro, N. C.
265. G. F. Monfort—Good Roads Machinery Co., Pittsburgh, Pa.
266. Rylang H. New—Hamilton & Toronto Sewer Pipe Co., Ltd., Hamilton, Ont.
267. J. L. Buckley—Hydraulic-Press Brick Co., Aledo, Ill.
268. Frank D. Beisanz—Winona, Minn.
269. John S. Haggerty—John S. Haggerty Co., Detroit, Mich.
270. J. B. Stanwood—Houston, Stanwood & Gamble Co., Cincinnati, O.
271. Jno. D. Martin—Straitsville Impervious Brick Co., New Straitsville, O.
272. J. M. Highhouse — Hydraulic-Press Brick Co., Toledo, O.
273. E. D. Mattes—Decatur Brick Mfg. Co., Decatur, Ill.
274. H. C. Millott—The Hinde Brick & Tile Co., Sandusky, O.
275. F. A. Hoiles—The Alliance Brick Co., Alliance, O.
276. R. Benton Child—Hancock Brick & Tile Co., Findlay, O.
277. Thos. Oliff—Clio, Mich.
278. L. L. Dennison—The Delaware Clay Mfg. Co., Delaware, O.
279. L. N. Delamater—Jackson, Mich.
280. H. A. Johann—Kennedy Stroh Co., Chicago, Ill.
281. E. R. Garlick—Kirchner Brick Co., Cincinnati, O.
500. F. E. Schultz—The Wooster Shale Brick Co., Wooster, O.
501. Spencer M. Duty—The Deckman-Duty Brick Co., Cleveland, O.
502. Herbert C. Moatz—The Deckman-Duty Brick Co., Cleveland, O.
503. Chas. G. Deckman—The Deckman-Duty Brick Co., Cleveland, O.
504. Chas. A. Mattison—Dodge Mfg. Co., Mishawaka, Ind.
505. W. R. Thompson.
506. R. G. Smith—American Blower Co., Detroit, Mich.
507. F. H. King—The Marion Steam Shovel Co., Marion, O.
508. Thos. A. Hibbins—The Stevenson Co., Wellsville, O.
509. J. S. McCann—Thornton Fire Brick Co., Thornton, W. Va.
510. Everett M. Adams—Detroit Vitrified Brick Co., Detroit, Mich.
511. Frank G. Willson—S. B. Dobbs, Philadelphia, Pa.
512. Frank R. Mahurin—Arnold Creager Columbus, O.
513. E. F. Decker—Main Belting Co., Louisville, Ky.
514. Frank W. Wood—Danville Brick Co., Danville, Ill.
515. H. Layer—L. E. Rodgers Engineering Co., Chicago, Ill.
516. T. Chester—American Blower Co., Detroit, Mich.
517. Robert J. Montgomery — Pittsburg Plate Glass Co., Creighton, Pa.
518. E. T. Montgomery—N. Y. State School of Ceramics, Alfred, N. Y.
519. G. S. Totten—Detroit Brick Sales Co., Detroit, Mich.
520. Forrest K. Pence—American Encaustic Tiling Co., Zanesville, O.
521. W. R. Randall — Thew Automatic Shovel Co., Lorain, O.
522. C. W. Berry—Laclede Christy Clay Products Co., St. Louis, Mo.
523. J. W. DeBeaubee—Detroit Vitrified Brick Co., Detroit, Mich.
524. Samuel Rusoff—Columbus, O.
525. R. G. Smith—Detroit, Mich.
526. W. G. Austin—The R. D. Baker Co., Kalamazoo, Mich.
527. H. S. Fate—J. D. Fate Co., Plymouth, O.
528. W. G. Stevenson—National Silica Co., Oregon, Ill.
529. H. R. Sykes—The J. D. Fate Co., Plymouth, O.
530. Robt. W. H. Pierce—Harbison-Walker Co., Pittsburgh, Pa.
531. G. H. Brown—Bureau of Standards, Pittsburgh, Pa.
532. Homer F. Staley—Iowa State College, Ames, Iowa.
533. S. C. Haines—Main Belting Co., Detroit, Mich.
534. Fred R. Garst—Amer. Enam. Brick & Tile Co., New York, N. Y.
535. Kenneth I. Fulton—Port. Drain Tile Co., Portland, Ind.
536. Forrest Fordham, Jr.—Bucyrus Co., Detroit, Mich.
537. W. H. Gibb—Stupakoff Laboratories, Pittsburgh, Pa.
538. Horace G. Smith—Detroit, Mich.
539. A. R. Pardington—Lincoln Highway, Detroit, Mich.
540. J. J. Frank—Chase Foundry & Mach. Co., Detroit, Mich.
542. J. J. Ryan—National Fire Proofing Co.
543. Ernest W. Knapp—Sun Brick Co., Ltd., Toronto, Ont., Can.
544. Philip H. Gray—Dresden Brick Co., Detroit, Mich.
545. H. H. Spencer—Dresden Brick Co., Detroit, Mich.
546. Glenn V. Cathey—Dresden Brick Co., Detroit, Mich.
547. Wm. Koelliker—C. O. Bartlett & Snow Co., Cleveland, O.
548. C. E. Martin—Palmer Brick Co., Detroit, Mich.
549. J. W. Morrison—Puritan Brick Co., Detroit, Mich.
550. E. E. Moran—Dresden Brick Co., Detroit, Mich.
551. S. F. Spencer—Dresden Brick Co., Detroit, Mich.
552. E. L. Hess—E. M. Freese & Co., Galion, O.
553. G. R. Truman—St. Louis Terra Cotta Co., St. Louis, Mo.
554. R. L. Clare—Federal Terra Cotta Co., Perth Amboy, N. J.
555. Geo. W. Shoemaker—Saskatchewan Clay Products Co., Moose Jaw, Sask.
556. H. F. Krieg—Midland Terra Cotta Co., Chicago, Ill.
557. Alexander Lieverman—Uni. of Pa., Pittsburg, Pa.
558. Stanley H. Rood—W. A. Lorenz, Hartford, Conn.
559. Charles H. Kepler—Saginaw Paving Brick Co., Saginaw, Mich.
560. A. F. Greaves-Walker—Sun Brick Co., Toronto, Ont.
561. George O. Hoover—Keim Brick Co., Osnaburg, O.
562. F. L. Culbertson—Ball Engine Co., Erie, Pa.
564. Ray Hoover—Dresden Brick Co., Detroit, Mich.
565. Jesse Taylor—Better Roads & Streets, Jamestown, O.
566. H. B. Henderson—With Edward Orton, Jr., Columbus, O.
567. A. B. Luten—Metropolitan Paving Brick Co., Toledo, O.
568. J. Lee Barrett—Detroit Convention Bureau, Detroit, Mich.
569. George Fenkell—Commissioner Public Works, Detroit, Mich.
570. W. B. Cordes—Mercier-Bryan-Larkins Brick Co., Detroit, Mich.
571. A. A. Fordon—Corrunna Brick Co., Detroit, Mich.
572. Wesley Englehorn—Cleveland Chamber of Commerce, Cleveland, O.

(Continued on page 450)

N. B. M. A. Roster (Continued)

573. L. F. McKenzie—Westinghouse Electric & Mfg. Co., Detroit, Mich.
574. F. B. Holmes—F. B. Holmes & Co., Detroit, Mich.
575. Henry M. Lane—The H. M. Lane Co., Detroit, Mich.
576. Edward L. Schneider—F. B. Holmes Co., Detroit, Mich.
577. H. L. Longenecker—Green Engineering Co., Chicago, Ill.
578. Wm. A. Ochs—A. C. Ochs Brick & Tile Co., Springfield, Minn.
579. E. J. Mellen—Cleveland Alloys Co., Cleveland, O.
581. Frank Griffes—Jackson, Mich.
582. Lucius S. Kendrick — Williamston, Mich.
583. W. V. Bragdon—Bellevue, Pa.
584. F. N. Menefee—University of Michigan, Ann Arbor, Mich.
585. D. A. Moulton—Citadel Brick Co., Ironton, O.
586. R. M. Adams—Detroit Vitrified Brick Co., Detroit, Mich.
587. Frank Schmidt—Detroit Vitrified Brick Co., Detroit, Mich.
588. Walter Page—Ontario Paving Brick Co., Toronto, Ont., Can.
589. A. J. Aubrey—Bessemer Limestone Co., Bessemer, Pa.
590. Richard R. Hice—Beaver, Pa.
591. Edward C. Stover—Trenton Potteries Co., Trenton, N. J.
592. W. J. J. Bowman—J. L. Mott Co., Trenton, N. J.
593. Harry C. Podolsky—Bonner-Marshall Brick Co., Chicago, Ill.
594. W. J. Baird—Baird Mach. Mfg. Co., Park Hill, Ont., Can.
595. T. W. Nevin—Adams Publishing Co., Pittsburgh, Pa.
596. J. L. Sievert—Adams Publishing Co., Pittsburgh, Pa.
597. Geo. P. Wilson—Devonshire Brick Co., Dillonvale, O.
598. Joseph Ruby—Cuyahoga Brick & Shale Co., Cleveland, O.
599. Lawrence Hickey—Detroit, Mich.
601. S. H. Aukeney—The Greater Dayton Ass'n, Dayton, O.
602. Henry T. Wynn—Wynn & Starr Co., Trafford, Pa.
603. A. Potts—Indianapolis, Ind.
604. Justin A. Runyan—St. Louis, Mo.
605. W. C. Ladendorf—F. B. Holmes & Co., Detroit, Mich.
606. Carl Dehoney—Cincinnati Chamber of Commerce, Cincinnati, O.
607. E. P. Teague—Union Cement & Lime Co., Louisville, Ky.
608. John H. Donahue, Jr.—Belt Line Brick Co., St. Paul, Minn.
609. J. H. Robinson—The Standard Stone & Brick Co., Bellaire, O.
610. Harry W. Smith—Roessler-Hasslacher Chemical Co., East Liverpool, O.
611. Walter Schapper—Roessler-Hasslacher Chemical Co., Chicago, Ill.
612. D. C. Wilcox—Alliance Clay Products Co., Alliance, O.
613. Jacob Rahn—Alliance Clay Products Co., Alliance, O.
614. F. A. Fleming—The Chase Foundry & Mfg. Co., Columbus, O.
615. George Cutbush—Don Valley Brick Co., Toronto, Ont.
616. John E. Clapp—Highland Park, Mich.
617. H. L. Killam—Chase Foundry & Mfg. Co., Columbus, O.
619. W. S. Bissell—Michigan Contractor & Builder, Detroit Mich.
620. Kirke P. Lincoln—H. K. Porter Co., Pittsburgh, Pa.
621. R. K. Hursh—University of Illinois, Urbana, Ill.
622. Jno. G. Thatcher—F. R. Upton Co., Newark, N. J.
623. J. Ira Davy—Federal Clay Products Co., Mineral City, O.
624. E. C. Howard—Claycraft Brick Co., Columbia, O.
625. Jno. A. Topping—Barber Asphalt Paving Co., Chicago, Ill.
627. H. H. Freese—E. M. Freese & Co., Galion, O.
628. Morris C. Gregory—Brick, Terra Cotta & Tile Co., Corning, N. Y.
629. W. Porter Jones—Engineer, Detroit, Mich.
630. William T. Walker—Walker & Frank Brick Co., Detroit, Mich.
631. William W. Walker—Walker & Frank Brick Co., Detroit, Mich.
632. Fred L. Twining—Michigan Vitrified Brick Co., Bay City, Mich.
633. Peter Missett — Michigan Vitrified Brick Co., Bay City, Mich.
634. F. C. Morgan—The Puritan Brick Co., Hamden, O.
635. M. S. Charlton—Thomas Bros. & Co., Ltd., Detroit, Mich.
636. Jno. S. Stege—Detroit Roofing Tile Co., Detroit, Mich.
637. Geo. Rush—Detroit Roofing Tile Co., Detroit, Mich.
638. H. P. Harding—The Puritan Brick Co., Detroit, Mich.
639. H. A. Benjamin—The Puritan Brick Co., Detroit, Mich.
640. H. W. Griffith—Detroit, Mich.
641. Chas. V. Zimmerman—Puritan Brick Co., Detroit, Mich.
642. Wm. F. J. Schneider—F. B. Holmes Co., Detroit, Mich.
643. F. E. Harvey—Cadwell Sand & Gravel Co., Ltd, Windsor, Ont., Can.
644. Andrew Baird—Baird Mach. & Mfg. Co., Park Hill, Ont., Can.
645. R. P. Stoddard—S. A. F. E., Cleveland, O.
646. Floyd E. Waite—S. A. F. E., Cleveland, O.
647. Gage W. Cooper—A. & W. Cooper, Detroit, Mich.
650. Wm. R. Wembsy—Hershaw, Fuller & Goodwin Co., Cleveland, O.
652. Harry E. Warden—Ont. Asphalt Brick Co., Walkerville, Ont., Can.
653. E. A. Stewart—The Stark Brick Co., Canton, O.
654. Jos. Larkins—Mercier, Bryan, Larkins Brick Co., Detroit, Mich.
656. R. C. Kimball—Galion Dynamic Motor Truck Co., Galion, O.
657. H. White—Geo. E. White & Son, Windsor, Ont., Can.
868. M. F. McGrath—American Gypsum Co., Detroit, Mich.
659. W. H. Knapp—Mershon, Eddy, Parker Co., Saginaw, Mich.
660. C. R. Vallin—Ford Motor Co., Detroit, Mich.
661. A. B. Jewett—Ford Motor Co., Detroit, Mich.
662. Carl G. Snyder—J. C. McDonald & Son, Detroit, Mich.
663. S. M. Bowman—Layton Fire Clay Co., McKeesport, Pa.
664. Jno. W. Sanders—U. S. Stamping Co., Moundsville, W. Va.
665. Geo. R. Smith—C. Peterson Paving Co., Kenosha, Wis.
666. Carl E. Breisinger—Bucyrus, O.
667. A. B. Osler—Eclipse Paint & Mfg. Co., Zanesville, O.
668. B. H. Martin—Eclipse Paint & Mfg. Co., Zanesville, O.
669. Rev. J. R. Kline—Foster Paving Block Co., Detroit, Mich.
670. C. O. Arbogust—Brick and Clay Record, Chicago, Ill.
671. Frank Shenkle—Federal Clay Products Co., Mineral City, O.
672. J. H. Wilson—Perrysburg Tile & Brick Co., Perrysburg, O.
673. P. J. Mamer—Mamer Brick Co., Benton Harbor, Mich.
674. Waldo A. Titsworth—N. Y. State School of Ceramics, Alfred, N. Y.
675. Raymond C. Howe—N. Y. State School of Ceramics, Alfred, N. Y.
676. George A. Bole—N. Y. State School of Ceramics, Alfred, N. Y.
677. F. H. Wolf—F. H. Wolf Brick Co., Detroit, Mich.
678. Clarence A. Clarke—Detroit Brick Sales Co., Detroit, Mich.
679. P. C. McGowen—F. Long & Son, Detroit, Mich.
680. A. H. Long—F. Long & Son, Detroit.
581. E. P. Foster—Bessemer Limestone Co., Youngstown, O.
682. H. H. Hallatt—H. H. Hallatt Co., Tilbury, Ont.
683. C. H. Land—Detroit, Mich.
684. A. D. Masby—Marsh-Capron Mfg. Co., Chicago, Ill.
685. C. Greene—Marsh-Capron Mfg. Co., Chicago, Ill.
686. Fred Brand—West Salem Hollow Brick & Tile Co., West Salem, Ill.
687. T. A. Drury—Drury Bros., Inc., Goldsboro, N. C.
688. J. A. Lansberry—Trumbull Brick Co., Warren, O.
689. M. Bates—Zeeland Brick Co., Zeeland, Mich.
690. Frank Coleman—Hamilton & Ont. Sewer Pipe Co., Hamilton, Ont., Can.
691. T. H. Graham—Hamilton, Ont., Sewer Pipe Co., Inglewood, Ont., Can.
692. I. W. Preetorius—Brick and Clay Record, Chicago, Ill.
693. E. L. Powers—"Good Roads," New York City, N. Y.
694. F. C. Solms—Puritan Brick Co., Detroit, Mich.
695. Robt. C. Spencer, Jr.—Spencer & Powers, Architects, Chicago, Ill.
696. E. W. Sanders—U. S. Stamping Co., Detroit, Mich.
697. F. A. Rumbarger—Bucyrus Co., Pittsburgh, Pa.
699. John P. Turpin — Hocking Valley Products Co., Columbus, O.
870. Walter L. Gregory—Chicago, Ill.
871. C. B. Whitman—Diamond Power Specialty Co., Detroit, Mich.
872. R. S. Fulton—Diamond Power Specialty Co., Detroit, Mich.
873. J. A. S. Wardrof—U. S. Sewer Pipe Co., Pittsburgh, Pa.
874. Geo. H. Ganson—Dover Fire Brick Co., Cleveland, O.
875. H. S. Matthews—Graves Shale Paving Brick Co., Birmingham, Ala.
876. E. H. Baker—Baker Clay Co., Grand Ledge, Mich.
877. Jos. J. Hinde—Hinde Brick & Tile Co., Sandusky, O.
878. Geo. A. Millott—Hinde Brick & Tile Co., Sandusky, O.
879. Carl C. Walters — Hocking Valley Products Co., Columbus, O.
880. J. F. Eggers—U. S. Sewer Pipe Co., Pittsburgh, Pa.
881. W. M. Edison—Federal Clay Products Co., Mineral City, O.
882. C. W. Irwin—Hydraulic-Press Brick Co., Toledo, O.
883. F. J. Lohmann—The Parker-Lohmann Brick Co., Saginaw, Mich.
884. D. Earl Child—The Hancock Brick & Tile Co., Findlay, O.
885. A. N. Wehmyer—Ottawa Tile Co., Ottawa, O.
886. George Hudson—Detroit, Mich.
887. H. D. Drake—H. D. Drake & Co., Walkerville, Ont.
888. Wm. Bushanan—London, Ont.
889. J. L. Messacar—Jasperson Brick & Tile Co., Coatsworth, Ont.
891. F. R. Buchanan—Detroit, Mich.
892. Jos. H. Desherow—Detroit, Mich.
893. Frank L. Shafer—F. B. Stevens Co., Detroit, Mich.
894. Robt. Walker—American Sewer Pipe Co., Jackson, Mich.

Ceramic Convention Huge Success

The Largest Registration in the History of the American Ceramic Society and an Exceptionally Long List of Applicants for Admission, Shows a Growing Interest in Technical Claycrafting

By C. O. Arbogust, Cr. E.,
Associate Member, American Ceramic Society.

THE SEVENTEENTH ANNUAL MEETING of the American Ceramic Society is now past history. The meeting was particularly successful this year, due to an awakened interest in the society, not only by the members and associates, but also by a goodly number of outsiders, and also this success was due to a most fortunate location.

The convention was in the Hotel Tuller, which has directly opposite it, one hundred feet away, the new Hotel Statler, where the brickmakers were convening. This fact materially increased both meetings, for a considerable number of ceramists are also affiliated with the National Brick Manufacturers' Association.

The first session was called to order at 11:00 o'clock, Monday morning, February 15, and immediately the routine business was disposed of.

The fun that is invariably undercurrent in all of the A. C. S. meetings first cropped out during the report of the committees appointed for work last year. One committee (we believe that we cannot remember its name—a disease that similarly attacked the committee men) turned up with a smile and with an excuse that they were not absolutely sure that they thoroughly understood the meaning of the word "nomenclature." Ross C. Purdy and Arthur S. Watts also ran.

RECOMMENDED FOR ASSOCIATE MEMBERSHIP

Professor Ed Orton, Jr., secretary of the society, read the following list of names of men who had been recommended and approved for associate membership:

Grover Babcock, student, Alfred, N. Y.; Walter L. Bainbridge, chemical engineer, American Bottle Co., Newark, Ohio; Fred S. Bell, vice-president, The Mandle Clay Mining Co., St. Louis, Mo.; George F. Bissell, student, University of Illinois, Champaign, Ill.; Edward L. Blackmere, assistant superintendent, Blackmere & Post Pipe Co., St. Louis, Mo.; Macdonald C. Booze, student, Sullivan, Ill.; Loren C. Bow, student, Detroit, Mich.; R. P. Brown, president, Brown Instrument Co., Philadelphia, Pa.; Ermane G. Bucher, Champaign, Ill.; O. S. Buchner, student, University of Illinois, Urbana, Ill.; Augustus Carrier, chemist, Detroit Dental Mfg. Co., Detroit, Mich.; John A. Chase, student, University of Illinois, Urbana, Ill.; E. E. F. Creighton, consulting electrical engineer, General Electric Co., Schenectady, N. Y.; Ralph R. Danielson, assistant in ceramics, University of Illinois, Urbana, Ill.; Lister A. Beaner, student, Bloomington, Ill.; Herbert Forester, representative, Veritas Firing System Co., Cleveland, Ohio; K. I. Fulton, Portland Drain Tile Co., Portland, Ind.; Warren R. Gillard, research chemist, Pittsburgh Plate Glass Co., Ford City, Pa.; John S. Grainer, Battle Creek, Mich.; John R. Gregor, chemist, Detroit, Mich.; Fred J. Hill, student, University of Illinois, Champaign, Ill.; Fremont J. Hoehn, student, Carlinville, Ill.; Walter H. Huth, general manager, Grueby Faience & Tile Co., Boston, Mass.; Joseph A. Jeffery, president, Jeffery-Dewitt Co., Detroit, Mich.; Charles H. Jensen, president, Empire China Works, Brooklyn, N. Y.; Arthur A. Johnson, draftsman and designer, L. E. Rodgers Engineering Co., Chicago, Ill.; Charles A. King, technical chemist, Franley Iron Co., West Leeds, Eng.; A. A. Klein, petrographer, Bureau of Standards, Pittsburgh, Pa.; Harry J. Knollman, ceramic engineer, Perth Amboy, N. J.; Charles E. Kraus, refractories engineer, Brooklyn, N. Y.; S. C. Linbarger, student, Champaign, Ill.; Emil Sommerschuh, Bakonitz, Bohemia, Austria; John B. Lyon, student, University of Illinois, Urbana, Ill.; I. Andrew Kruson, ceramic engineer, Toronto, Canada; John B. Livingston, sales engineer, Picher Lead Co., Philadelphia, Pa.; T. M. McVay, laboratory assistant in ceramics, University of Illinois, Urbana, Ill.; Walter C. Millsom, student, Macomb, Ill.; Harlan S. Miner, chief chemist, Welsbach Co., Gloucester City, N. J.; V. Mulholland, engineer, Darlington Clay Products Co., Darlington, Pa.; C. H. Myers, Western Fire Clay Co., Murray, Utah; Francis T. Owens, treasurer and general manager, Ridgway Brick Co., Ridgway, Pa.; Herbert E. Pelton, secretary and treasurer, West Coast Tile Co., Los Angeles, Cal.; F. B. Porter, president, Fort Worth Laboratories, Fort Worth, Texas; William O. Rathfon, student, University of Illinois, Urbana, Ill.; Hugh S. Robertson, student, University of Illinois, Urbana, Ill.; Bert E. Salisbury, president, Onondaga Pottery Co., president, Pass & Seymour, Inc., Syracuse, N. Y.; Walter Schapper, salesman, Roessler-Hasslacher Chemical Co., New York; George M. Schaulin, student, University of Illinois, Urbana, Ill.; Harry Spurrier, chemist, Jeffery-Dewitt Co., Detroit, Mich.; Frederick Stanger, sales manager, Enterprise White Clay Co., Philadelphia, Pa.; R. A. J. Steinmayer, student, LaSalle, Ill.; Walter I. Tamlyn, electrical engineer, Brooklyn, N. Y.; Chester Treischel, student, Kankakee, Ill.; James C. Whitelaw, student, University of Illinois, Urbana, Ill., and Claude L. Wigfield, Enamel Pipe & Engineering Co., Elyria, Ohio.

PROMOTED TO ACTIVE MEMBERSHIP

The following men were taken from the class of associate members and were honored by being made active members. These men were all deserving and have shown, during the past few years, such an interest and insatiable desire to know the whys of things technical that they well merit this degree. They actually were elected by the active members of the society, but theoretically they elected themselves:

P. H. Bates, United States Bureau of Standards, Pittsburgh, Pa.; W. E. Emley, United States Bureau of Standards, Pittsburgh, Pa.; C. E. Fulton, Pittsburgh Plate Glass Co., Creighton, Pa.; B. S. Radcliffe, University of Illinois, Urbana, Ill.; J. Minnemann, Bethel, Ohio; C. E. Brockbank, manager The Exolon Co., Thorold, Ontario, Canada.

RECOMMENDED FOR ADVANCEMENT

For a similar promotion next year these additional men were nominated:

R. J. Montgomery, Pittsburgh Plate Glass Co., Creighton, Pa.; Alexander Silverman, University of Pittsburgh, Pittsburgh, Pa.; Wilbur T. Stout, Geological Survey of Ohio; Arthur E. Williams, University of Illinois, Urbana, Ill.; A.

A. Klein, United States Bureau of Standards, Pittsburgh, Pa.; D. E. Humphrey, superintendent, Deckman-Duty Co., Cleveland, Ohio; M. F. Beecher, Iowa Engineering Experiment Station, Ames, Iowa; Paul Teetor, Kansas Geological Survey; Ira A. Williams, University of Oregon, Corvallis, Ore.

TOTAL PRESENT MEMBERSHIP

It may be of interest to note here the substantial growth and present strength of the society.

Honorary members	4
Contributing members	2
Active members, resident	66
Active members, foreign	11
Associate members, resident	395
Associate members, foreign	45
	523

At the conclusion of the routine business a most admirable address was given by the retiring president, Cullen W. Parmelee, of New Brunswick, N. J. He showed, by charts, the value of imports and exports of various countries relating to clay products. It was a message with a "punch" and its effect should be deep. The address was pertinent and to the point, and particularly at this time of stress and distress should the moral of Mr. Parmelee's address be appreciated and live action taken.

All of the papers were meaty although it was not possible in every instance for the listeners to grasp the meaning of each paper, due to the necessity for haste and the consequent short space of time allotted to each one.

R. F. MacMichel, of Auburn, Wash., told how he makes practical tests of clays in his own laboratory, perhaps the most interesting points being the method and the machine used with which he determines the plasticity of clay. He dropped a bomb shell in his second paper when he contended that weathering of clays did not increase their working qualities. This was at first misunderstood to cover shales and fire clays, but he had reference only to surface clays.

D. E. Humphrey read a paper on "Drilling and Blasting of Shale Banks" supplemented with lantern slides. The paper created considerable comment and Marion W. Blair, of Kushequa, Pa., added some ideas culled from his own stock of experience, this being chiefly on drills and method of drilling in mines. Mr. Humphrey emphasized the value of connecting up his wires to caps in parallel rather than in series, and in a droll way noted that it was very aggravating to have a charge of dynamite go off in the dry pan where no dynamite ought to be.

Prof. Arthur S. Watts presented a query on the relative value of red, yellow and white lead when used as a flux. For argument he stated that red lead was worth five cents per pound as against five and a half cents for the other leads. Yet there is really more fluxing value in the same molecular quantity of red lead than is contained in the carbonate. In the discussion it was brought out that red lead causes pin holing for one man and for another man it did not. Another seed for investigation was planted.

Mabel C. Farren, of Pittsburgh, Pa., presented a brand new idea in her paper on "The Possibility of Applying a Uniform Nomenclature of Color to Ceramics, Based on Pure Color Theory."

Briefly, the idea was to so classify colors and shades so that it would be possible to closely identify and match colors by numbers.

Prof. Binns was enthusiastic, but doubtful of the practicability of the idea. From the store of his knowledge of human nature he produced the following proof that it would not work universally.

"Suppose," he said, "that the housewife had a piece of strawberry pink cloth, value of R-five-sub-five—suppose that she wanted it matched, would she send the maid to the nearest store or the cheapest or the most fashionable store with instructions to buy a certain number of yards (or a remnant, if a bargain) of shade of R-five-sub-five, or would she give the maid a sample, in order to establish *her* R-five-sub-five as a standard for purchase rather than accept the storekeeper's idea or claim of what R-five-sub-five was?"

But to be serious again, the article was received thoughtfully and at the end of the discussion had taken root and it was generally felt that it had a lot of good in it.

J. E. McBride, of Detroit, Mich., read a paper on "The Mechanical Handling of Cement." One of the many good points was a novel method of cleaning conveyor belts that become caked with damp clay.

E. P. Poste, of Elyria, Ohio, read his paper on "The Relative Action of Acids on Enamels." Considerable interest was aroused over the similarity of the curves produced in the test, with hydrochloric, nitric, sulphuric and acetic acids. Prof. H. F. Staley, of Ames, Iowa, ably discussed the paper.

F. K. Penee, of Zanesville, Ohio, showed in his paper on "The Commercial Classification of Floor Tiles as Related to Degree of Vitrification" that such a classification is needed. The floor tile man now submits to various infallible tests for vitrification such as placing drops of red, green or black ink on a sample of tile; if it discolors, it is *not* vitrified; if it does *not* discolor then the prospect buys cement. He loses out both ways because the purchaser knows too much about floor tile. At any rate, the following procedure was adopted by the author of the paper. The tile are boiled for one hour, if the piece absorbs not over two per cent it is considered vitrified; an absorption of from two to ten per cent give it the standing of "semi-vitreous" or if more than ten per cent it is "non-vitreous."

Corroboration was found when it was stated in the discussion that this conclusion had already been adopted by two other members.

In addition to the regular program there were two lectures of more than usual interest. One was by Prof. E. D. Campbell, of the University of Michigan. He lectured on "The Theory of the Formation of Some Basic Silicates." The lecture was of the most intense interest, not only on account of the subject matter, which disclosed a wonderfully ingenuous method of study, but also on account of the personality of the speaker.

The other lecture was given Tuesday evening by Wilbur T. Stout, of the Geological Survey of Ohio, and was the first statement of a new theory of the mode of formation of coal-measure fire clays, a most important group of clay minerals whose origin seems to have been quite different from that of the more common types.

There were present 29 active members of the society, including 12 presidents (past and present), 78 associate members and 22 visitors, many of whom are applicants for admission and not yet acted on. The total registration was 128, the largest in the history of the organization.

The financial standing is better than ever before. After getting out a large and creditable volume of about 800 pages, the society had a very comfortable surplus to carry over for next year's work.

THE NEW OFFICERS.

During the closing session, the officers elected for the ensuing year were announced, the choice falling on:

President, Richard R. Hice, Beaver, Pa.; vice-president, Raymond T. Stull, Urbana, Ill.; secretary, Edward Orton, Jr., Columbus, Ohio; treasurer, Herford Hope, New Brighton, Pa. Members of the board of trustees: Homer F. Staley, Ames, Iowa; F. W. Walker, Beaver Falls, Pa.; George H. Brown, Pittsburgh, Pa.

Real Building Brick Promotion

Brickmakers Decide to "Get into the Game" With a Promotion Fund Rivalling Those Raised by Lumber and Cement Interests

By William B. Wreford,
Manager Detroit Brick Mfrs. & Dlrs. Association.

WHILE THE BRICKMAKERS of Detroit are flushed at the compliments that are being handed them because of the successful convention of the National Brick Manufacturers' Association, recently closed in their city, they are happiest in the belief that the foundation for a great national brick publicity organization was laid, and that a structure will be reared upon that foundation which will rival those of the lumber and cement interests, that stand so boldly in the sun.

The instigator of the thought, and great credit is due him, is Fritz Salmen, second vice-president of the N. B. M. A., and a brickmaker of national renown. He comes from Slidell, La., and has been a consistent brick "booster" for many years. To him, by the way, is the credit due of bringing the 1914 N. B. M. A. convention to New Orleans.

The idea of a national association organized for the purpose of advocating and advertising brick, is not a new one to the Detroit brick manufacturers, for they already have an organization, the work of which, and the plan and scope of its activities, are serving to guide the organization of similar local bodies.

It was fitting that Fritz Salmen should have been made chairman of the "Committee of Ten" that is to work out the plan for the organization of a national advertising and publicity campaign. After careful thought, Mr. Salmen selected the following nine men to serve with him: George H. Clippert, Detroit, Mich.; H. C. Kleymeyer, Evansville, Ind.; T. E. Wilson, Pittsburgh, Pa.; Warren W. Ittner, St. Louis, Mo.; R. G. Eisenhart, Horseheads, N. Y.; William Hanley, Bradford, Pa.; W. P. Varney, Chicago, Ill.; J. Post, East Williston, N. Y., and R. C. Mitchell, of Cleveland, Ohio. These men represent a widely scattered territory—each has earned his spurs in the brick industry—each represents an experience in publicity.

One of the first steps necessary for the committee to take will be the incorporation of a national organization, but in the humble opinion of the writer, the prosperity of the brick industry will be more quickly and securely advanced by the creation of local organizations such as the Detroit Brick Manufacturers and Dealers' Association, which could work in perfect harmony with the national body. That local organizations can be made a success has been clearly proven by the success of the Detroit organization. Although established but seven months, it proves not only the necessity of such an organization, but the advantages of the same.

Another important move necessary for either the national or any of the local organizations following incorporating is the compilation of data on the industry, the material and its uses.

To deviate from the subject long enough to explain the point, let me cite the case in Michigan, which is probably the case in every other state. On going through the records of Michigan it was found that the history of brick making had never been committed to the records to any great extent. It proves very clearly that the men in the brick industry in early days were not interested in publicity or advertising, nor did they care to boast of their development. After much searching of records, it was found that as early as 1702 the founder of the City of Cadillac wrote back to France that he had discovered along the Detroit river, a little below Detroit, an abundance of brick clay in the vicinity, and there is no doubt that some brick were made and used in Detroit as early as that date, though as we said before, there is little in the records or history of Michigan to authentically prove this. Unfortunately, this is probably true of all other brick manufacturing centers in the United States, and it is to be hoped that the brick men of the United States will see the handwriting on the wall and answer the summons of the recently appointed "Committee of Ten."

The national association can take their lesson from the results that have been accomplished by similar organizations for other building materials. The national body can be of inestimable value to the local organizations by providing them with suitable material to fit local conditions and stand as a clearing house for information supplied from the various committee organizations, in addition to handling such national advertising, the printing of pamphlets, and the preparation of educational talks as the amount raised will permit.

It is very pleasant for the Detroit brick men to know that already there has been received a half dozen inquiries from other cities seeking information relative to the local organization. The Detroit association stands ready and willing to assist other communities to organize by placing such information as it has at their disposal.

The brick industry today is undergoing a new era of development and appears to be about to add the last requisite for a successful business—advertising; and in order to accomplish results in advertising, the brick men must remember that "In Union There is Strength," and furthermore, "United We Stand; Divided We Fall."

Oliver Typewriter Efficiency

By way of giving credit where credit is due, "Brick and Clay Record" takes this opportunity of thanking the management of the Oliver Typewriter Company's Detroit office for the wholly efficient way in which it handled the written request made it some days prior to the N. B. M. A. convention. The request called for an expert stenographer, and a 1915 model Oliver typewriter, both to appear at "Brick and Clay Record's" headquarters, in the Hotel Statler, the morning of the convention's opening day. Bright and early the machine and the operator were there, working diligently and efficiently until the convention closed. Since "service" is the keynote of business success, the Oliver must be looked for among the "world's best sellers."

"Brick and Clay Record's" Charts

The statistical charts that caused so much comment among the visitors to "Brick and Clay Record's" headquarters during the N. B. M. A. convention are but the the beginning of a large collection, which, it is planned, will be loaned for the conventions of various clay products organizations.

Reaching the Farmer

The Seventh of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XVI

A Study in Silo Advertising

SILO ADVERTISING, unlike that of drain tile, has progressed to high state of perfection. The manufacturers of wood, cement and metal silos are responsible for this fact. They have spent and still are spending constantly increasing appropriations to convince the farmer that he needs a silo, and incidentally that he needs one constructed of their particular material. These "competitive" interests have, in truth, blazed the trail for the man who makes burned clay silo block.

It will, therefore, readily be seen that an advertisement written to sell burned clay silos must be essentially different n its appeal from an advertisement for drain tile. The farmer knows more about silos than he does about drainage, and because of this fact, must be talked to from an entirely different standpoint than would be assumed were we trying to sell him drain tile. This fact necessitates a new "analysis" of the field before attempting to produce effective advertising for burned clay silos, and in order that the reader may understand the reason for the appeal in the accompanying silo ad., a brief analysis of the situation is given.

The silo, while a comparatively new idea, has gained a host of friends. Its ability to bring the succulence of summer into the feed trough on the coldest day in January, and with a remarkable saving over old methods of feeding, has won for it an everlasting place on the farm. Dreary winter holds but little dread for the stock raiser or dairyman with a silo. They know that no matter what the temperature may be out-of-doors, their stock, when fed on silage mixed with other feeds, making a balanced ration, will be kept in the best condition and will appear on the meadow, in the spring, as fat and sleek as though it were summer all of the year. There is no shortage of milk in the dairy on the farm that includes a silo, and the figures in the bank book are larger, in the spring, than they were when winter closed in—a sure test of the efficiency of the silo.

And the farmer has found a money-maker in his silo, when summer droughts made grazing difficult. The well filled silo has held him safe against disaster.

But, while the farmer has gained this knowledge in a few short years, he is far from being entitled to the credit for the remarkable advance that has marked cattle feeding methods. In this, as in many other lines of his chosen calling, his progress has been a series of neglected opportunities. Up to the present decade, improvements on the farm have been slow. In the matter of utilizing and preserving his corn for winter feeding, he has not belied his reputation for slowness.

The credit must be given, in the main, to the national government and to other institutions that have interested themselves in the farmer's welfare. The U. S. Department of Agriculture, the Experiment Stations, the Agricultural Colleges and farm journals all have recognized the value of the silo. Together, they have expended a great sum in the investigation of silo possibilities, promotion, proper building and use.

They began, it may be said, by convincing themselves that a silo was a good thing for the man who raised cattle. Then they advocated the more extensive use of silage and followed this by practical demonstration of the money-earning value of the silo and silage feed. They are doing the work of convincing the farmer of the truths they have learned. What is the result?

A new industry has sprung up as if over night. The manufacture of various types of silos employs an army of men and a large amount of capital. Take the wooden silo business, for instance. There are very few men in the clay-working industry who realize the extent of this branch of the silo manufacturing industry. Its members have good sales organizations with live representatives calling on the farmers, and these organizations are selling thousands of flimsy wooden structures in all parts of this country.

Nor has the concrete silo been neglected. Large manufacturers and producers of cement are investing thousands of dollars annually for publicity to convince the farmer that the concrete silo is the only kind of silo that stands for permanence and perfectly preserved silage. The cement interests have large service departments. One company alone in the past has employed as high as eighty salesmen-engineers whose duty it has been to help the farmer in erecting his silo and other buildings of concrete.

This spirit of helpfulness and co-operation, together with a liberal use of advertising space, has done much to promote the concrete silo. In Leavenworth county, Kansas, for instance, through the efforts of the county agricultural agent, four farmers recently organized a silo club. These little organizations exist in great numbers throughout the West and Middle West. This particular club secured the plans for the construction of the forms for a cement silo from the Kansas Agricultural College and a representative of the extension division of the college assisted them for a few days in getting started. With a little help of this kind, they have been able to get along very nicely, and have constructed their own silos. *They chose concrete because they had been taught that it was both economical and permanent.*

These farmers might have built silos of burned clay, just as permanent and at no greater cost than concrete, *had they been educated in the merits of burned clay*—if the clayworker had invested a small part of the lost profits that he sacrifices annually.

So you see from this "analysis" that there are a number of forces at work trying to get the farmer to use more silage and build more silos. These forces are telling him how good silage is for his stock and how it will increase his bank account. The Department of Agriculture, the Experiment Stations and the Agricultural Colleges, in most cases, stop at this point. The manufacturers of wooden, cement and metal silos repeat and emphasize the teachings of the agricultural experts, but add the advice that the farmer

use one or the other of their materials—always something different from burned clay.

The farmer has enough instructors in the science of using silage—men who know considerably more about this subject than anyone in the clayworking industry. *Why then, use costly advertising space in telling the farmer about the advantages of silage in order to get his attention long enough to tell him that he should build his silo of burned clay?* Why risk losing his interest by attempting to tell him at the very beginning what he already knows? Why not start where most silo ads. end? Why not at the very outset tell him about burned clay for silos—a subject about which he knows very little and about which he would like to learn more?

CHAPTER XVII

Tell the Farmer About Burned Clay

The most effective way to advertise burned clay silos is to tell what a burned clay silo will do. While every farmer knows a little—and many of them much—about silage, very few of them know anything worth knowing about structural materials. The average farmer takes most of his knowledge about the comparative merit of wood, cement, metal, brick and hollow block from booklets and other literature furnished him by manufacturers. He starts in with a prejudice against burned clay, because he believes that he is incapable of wielding a trowel. For years, he worked in wood. Then he worked in cement. When he wanted to use brick, he had to scour the countryside for a bricklayer.

Since there is a very limited amount of good literature in circulation and very little advertising advocating the use of burned clay for farm buildings, it is logical to suppose that the average farmer knows little or nothing about burned clay, except where individual manufacturers have done some missionary work. *It is not only a supposition but a fact that the farmer has much to learn about clay products.*

These facts very clearly indicate the kind of advertising that is most needed by manufacturers of burned clay silos. It is the kind of advertising that tells the farmer *why* he should build his silo of burned clay rather than metal, wood or concrete. The manufacturers of these last two commodities are making claims for their silos that are going unanswered. The defenders of the burned clay silo are conspicuous by their absence in the pages of the farm journals.

The man who is making wooden silos says that there is no leakage or absorption of the life-giving juices in the silage when his silo is used. This is no advantage over the properly vitrified clay silo, which will neither permit the escape nor the absorption of the juices. One of the bad features of the cement silo is that it absorbs these liquids to a certain extent. Here wood has no advantage over clay, while clay has a decided advantage over concrete.

The manufacturer of the wooden stave silo says his silo is air-tight and it prevents mildew from forming on the silage. This is an extravagant claim. The writer has seen pictures of wooden silos that have warped and contracted because they had been given an opportunity to dry out when the silage was removed in the spring. The result was that the silo became well ventilated—an extremely poor receptacle for the silage in the autumn. With a properly reinforced clay silo, such an

"A permanent, fire-proof, wind-proof, frost-proof, vitrified hollow tile silo will cost me no more than an unstable wood silo?

"—and less than an uncertain concrete silo? I never imagined that was possible."

A certain Iowa farmer built two permanent hollow tile silos on his place. Also built the barns and farm house of hollow clay products. Result: That farm sold less than one year afterward for $500.00 *an acre at public auction*—a tremendous increase over value of land prior to tile building improvements. (Name of farmer and location of farm on request.)

Yes—the same type of tile silo as that which stood up before the terrific tornado of Easter Sunday, 1913 (the day that Omaha was devastated). On a farm near Galva, Ill., directly in the teeth of that tornado, the smaller buildings were demolished. A whole grove of trees was leveled to the ground. The roof of an immense barn was blown more than a half mile away. *The vitrified hollow clay tile silo alone stood—intact*—undamaged. *Solid as though carved out of rock. That* kind of silo—for the same cost as an *erected* stave silo. For actually less cost than a concrete silo.

Interested? Then you will enjoy and profit by reading

The book on hollow tile silos a copy of which we will gladly send to you free on request. Read it—to learn why a hollow tile silo *is* moisture-proof and frost-proof as well as wind-proof and fire-proof—why it will last for generations—why it costs nothing for maintenance, no painting, no re-hooping—why it keeps silage better.

Write for this Free Book at once

Clay Products Publicity Bureau

Box 217 **St. Louis, Mo.**

A Specimen Silo Ad. That Lands a Blow for Burned Clay in Every Line. Like the Drain Tile Ad., This Was Prepared by a Trained "Copy" Writer and Is Convincing of the Effectiveness of Bureau Advertising

occurrence would be an utter impossibility. The minute the last unit in the burned clay silo is set, it becomes air-tight and remains so until it is torn down. There is no possible chance for the air to get in and spoil the silage in a silo built of burned clay.

One of the greatest disadvantages of the wooden silo is that it allows the silage to freeze in cold weather. The manufacturers and advocates of this type of silo claim that the heat developed in the curing silage prevents freezing. This may be true down to a certain degree of temperature, but ask any farmer who has a stave silo what happens to his silage when the temperature gets below zero. It freezes. While this may not damage the silage, if used immediately after thawing, it certainly presents a dangerous condition. There is always the possibility of the farmer losing part of his herd by feeding spoiled silage. The clay tile or brick silo is frost-proof. The hollow air spaces in the tile form throughout the entire year. There does not seem to be any difficulty with freezing in a properly constructed brick silo. A long list of satisfied customers is the best testimony for the silo built of burned clay.

Cement claims for its silo a structure that is expense-proof, durable and permanent—a building that adds value to the farm. This is equally true of the burned clay silo. It is just as permanent, durable and free from repairs as is a concrete silo, and it adds just as much value to the farm.

These are the claims of the cement and lumber man. They have been taken from actual advertisements. Against these claims we have pitted those of the burned clay silo, *which have not appeared to any great extent in the farm journals nor in any other medium.* This is the best possible argument that something should be done along the lines of publicity for burned clay silos.

As the advertising of the burned clay silo advances, it is to be hoped that none of the valuable space will be devoted to the refutation of the claims made by the makers of other types—be they other types of burned clay, or of metal, or wood or concrete. In this we may well follow the lead of our competitors, who do not "bother" with the competition of burned clay, but rather expend their money in the promotion of the particular material they are trying to sell.

There is plenty of ammunition with which to load the siege-gun of the burned clay manufacturers—plenty of arguments *that will stand investigation,* why burned clay is what it claims to be—the best. There are plenty of reasons why a farmer should use burned clay, in preference to metal, wood or concrete—the point is, to stamp those reasons on his mind so strongly, that he will consider burned clay only, when he considers building a silo.

So many good thoughts come to the mind of the man who makes and sells burned clay for silo use, that it seems impossible that he will waste space telling any story, other than the one that is in his mind—*that burned clay is best, for a half a hundred reasons*—and then given the reasons.

With the national government and all of the other publicly supported means of creating a demand, a market is being made. There is no reason why burned clay should not have its share of that market. The key to the gate lies in the advertising columns of the farm papers, and in well prepared printed matter, to be used as follow-ups.

In the next article we will discuss the promotion of burned clay for barns and small farm buildings.

Enforcing Personal Responsibility

Those interested in the fire prevention campaign believe that the education of the public has gone far enough to justify entering upon the next important step. This is the enactment into law of the enlightened official and public sentiment, which has been aroused for the reduction of the fire waste. The public now understands as never before the essential principles that the property owners, not the insurance companies, pay the fire losses; that the best way to get lower insurance rates is to have fewer fires; and that the great bulk of the fires is due to carelessness, municipal or individual, and could easily be prevented by the exercise of proper precautions.

The important thing to accomplish is to arouse and enforce the sense of personal responsibility for fires, which is so effective a factor in the foreign situation. The foundations have been laid, and upon this it is proposed to erect a body of law, enforcing a reasonable degree of personal responsibility. It is assured that if this could be enacted and enforced it would have a tremendous effect in reducing the fire waste. A few years ago such a proposition would have been impracticable, but wonderful changes in public sentiment have taken place since then. The rapid growth of the workmen's compensation idea, enforcing upon the employer liability for accidents, has accustomed the public to this idea of responsibility, and there is no good reason why, if a man is held financially accountable for industrial injuries received in his employ, he should not be held equally responsible for injuries received and damages caused as a result of fires, especially when they are due to his carelessness or negligence.

The National Convention of Insurance Commissioners and the Fire Marshals' Association of North America have formally agreed to recommend and push state laws enforcing personal responsibility, and the city of New York has already put the principle into operation, and has collected money under it from property owners who had fires due to failure to comply with the city's requirements. Following the action of the state officials a tentative measure has been prepared, embodying the views of the National Fire Protection Association, the commissioners and fire marshals and others intested in the reduction of the fire waste. It is as follows:

Section 1. Any person, persons or corporation for any fire caused by, resulting from, or spreading by reason of, the negligence of such person, persons or corporation or the non-compliance with any law or ordinance or lawful regulation or requirement of or by any state or municipal authority, shall be liable: (1) for all loss, expense or damage caused by or resulting from such negligence or non-compliance; and (2) for any expense incurred by any municipal or other governmental agency in extinguishing or attempting to extinguish any fire so caused, resulting or spreading.

Section 2. In all actions against any person, company or corporation for the recovery of damages on account of any loss or injury to any property, real or personal, occasioned by fire communicated from property owned by one party to property owned by another party, the fact that such fire was so communicated shall be sufficient evidence to charge the occupant of the property in which the fire originated with negligence and place the burden of proof upon him.

Section 3. This act shall take effect.....

This measure has not yet been officially approved, but if it is it will be introduced in the various legislatures with the backing of the insurance commissioners and fire marshals, the credit men's associations and other business organizations. Even if it is not enacted in many states at the start, it will have a great educational effect by bringing home to the legislators and the people the fact of their personal responsibility, the assurance that this will be more and more strictly enforced from year to year, and that the solution of this great problem of the fire waste lies in their hands.

The Proper Construction of Hollow Ware Dies

Upon the Construction of the Die Largely Depends the Capacity of the Hollow Ware Plant

By Ernest W. Knapp

Superintendent, Sun Brick Company, Ltd., Toronto, Ont.

SHALES AND CLAYS in different sections of America vary greatly in their physical properties, so much so, that the construction of the ordinary hollow-ware die must conform to these properties and be governed by them. While the basic principles of all such dies may be the same, consisting of the die-plate, bridges and cores, no two plants build dies exactly alike, hence the demand is created for men on each and every plant capable of building and adjusting dies for all sorts of shapes to be manufactured from the material at hand. These dies generally run up into the hundreds, and represent in the aggregate a very large investment, hence failure and incompetence mean a huge loss.

Hollow-ware plants are usually run on a tonnage basis

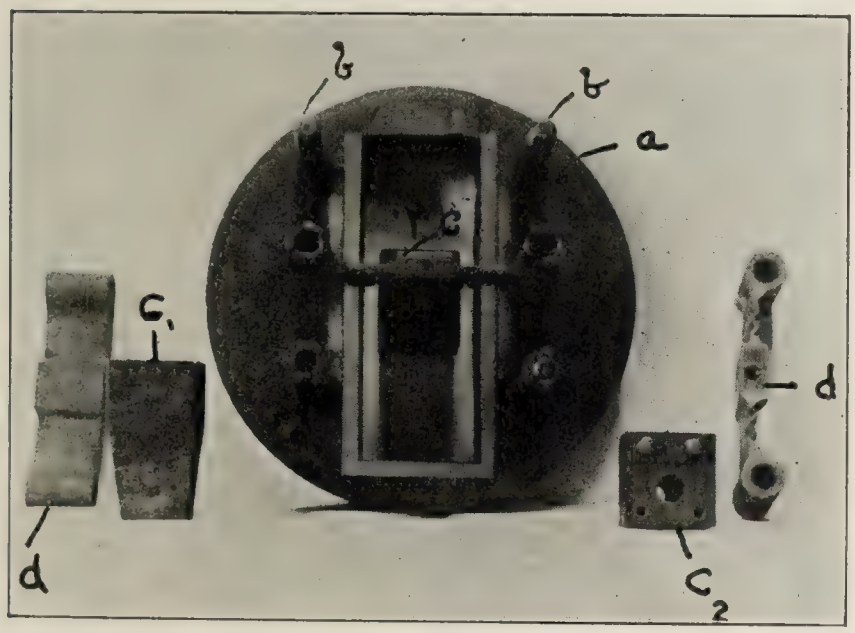


Fig. 1

and the tonnage is in direct proportion to the efficiency of the machinery and the die in use. If the die be poorly constructed, the clay will not flow through it easily, more horsepower is required to push it through, cracked and warped ware results, fuel and space is wasted in the dryer, and the actual cost of the die before it is brought up to its proper state of efficiency sometimes represents hundreds of dollars in lost tonnage and ruined ware. Every available ounce of metal that can be taken away from the bridges, studs and cores of a die, mean increased capacity and lessened horsepower. Too many plants neglect to study this point, and are not getting the capacity from their machines that is possible.

For the purpose of explaining the terms used in this article, Figs. 1, 2 and 3 show three simple forms of hollow ware dies. Fig. 1 is the back of a 4x12x12 inch partition die showing die-plate (a), studs for supporting bridges fastened to die-plate (b), bridge on die (c), side and bottom view of bridges at d, d_1 and the cores at c_1, c_2. Fig. 2 shows the back of a die for making Samson building tile with bridges and attached cores (a) removed.

Fig. 3 shows the front view of a die for making Denison Interlocking Tile (shown at each side of the die-plate). Fig. 4 and Fig. 5 show the side views of two correct dies in so far as the ware made is concerned, but it will be noted that while Fig. 4 has a heavy bridge with square blocks of metal at the points where the cores fasten on with bolts, Fig. 5 has the bridge tapered up to a knife edge, although giving as broad and strong a seat for the cores at the bottom, they being fastened to the bridge with studs screwed into the bottom instead of bolts. In Fig. 4 the cores taper straight away to the bottom, while in Fig. 5 every ounce of unnecessary metal is taken out on an emery wheel to lessen the friction and give greater space at the back of the die. In Fig. 4 the bridges are supported by drilled collars, through which the studs fasten into the die proper. In Fig. 5 the bridge is seated on studs shouldered out to remove friction to the clay, making them just as strong and having as good a seat on the die-plate and bridge. These studs can be made in a lathe with cold-rolled steel, and hence are light but very strong. Fig. 6 shows these studs attached to a die-plate at the left and the method of attaching the bridges to the studs at the die on the right.

Many hollow-ware dies are tapered back at the corners,

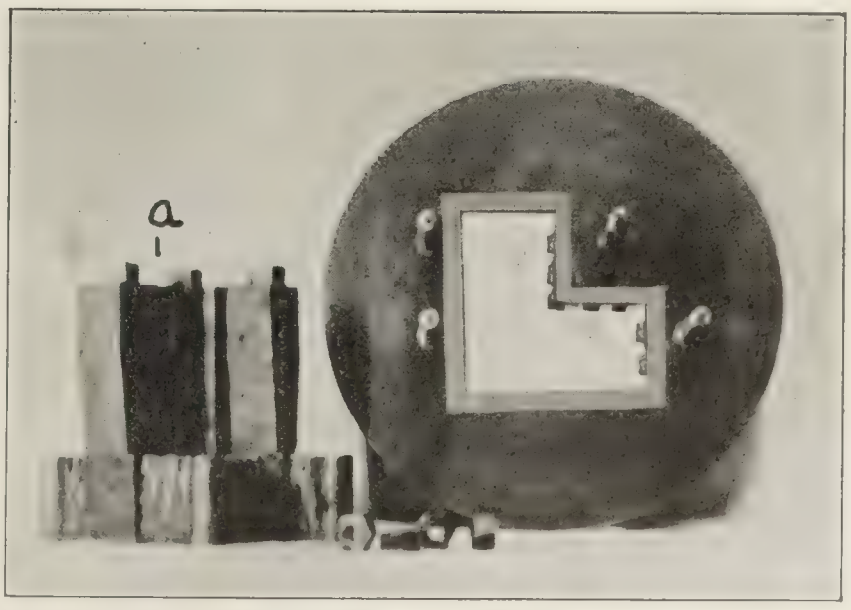


Fig. 2

to allow the corners to fill and the adjustment of clay-flow governed by permanent pieces of metal slotted on studs at the sides of the die, which are likewise tapered

back from the die opening. By shoving these pieces in or out, the clay could be made to flow slow or fast in the center or at any side. This forms an easy method of adjustment, but it puts a great deal of extra horse power on the machine, hence reduces its capacity per day, for the tapered cores and sides of the die compress the clay by their wedging action. If a die be correctly built no such adjustment is necessary, nor will any baffles or checks to the clay flow be required.

Fig. 7 shows the back of a die with the corners tapered back and adjustable pieces. Many dies likewise have the bridges fastened to rectangular pieces of iron at each side, giving them great rigidity to prevent the cores from shifting or the bridges from bending. This, however, is gained at reduced capacity and increased horsepower, as it cuts down materially the flow of clay from the sides.

Fig. 8 shows such an arrangenment, while an equally strong means of giving rigidity to the bridges is shown in Fig. 6, having the advantage of easy clay flow and lessened horsepower.

Another fallacy that is persistently followed by many hollow-ware concerns is in placing the die too far away from the auger. This is accomplished by long barrelled machines, by adding bell-shaped nozzles to the machine, by adding rings to the barrel before attaching the die, and by

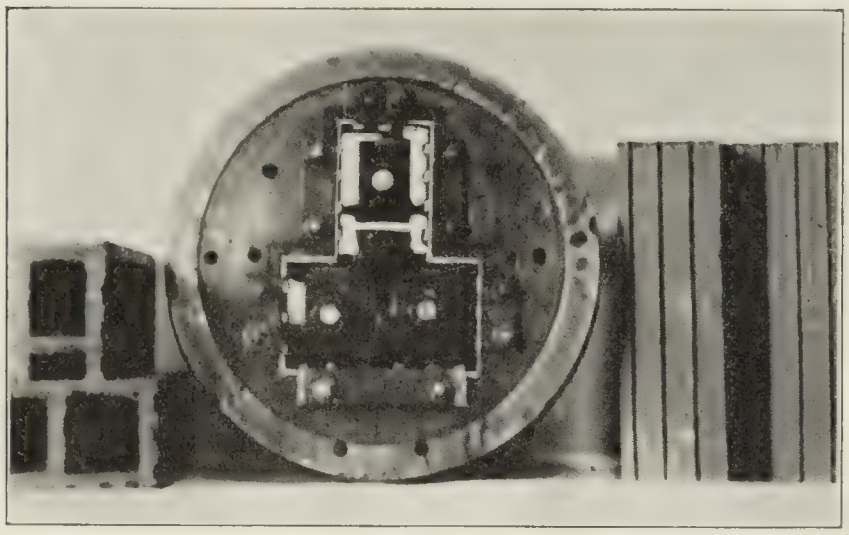


Fig. 3

building dies in a bell extension. On a hollow-ware machine in this locality, equipped with adjustable rings ranging from an inch thick to three inches, with motor drive, whose horsepower could be carefully watched by means of an instrument wired to the motor, it was found that the greater the distance of the die from the auger, the easier it would be to control and adjust the die, but that it added a great deal of friction in the barrel and materially increased the horsepower, hence directly increasing the cost per ton of ware. The correct distance from the tip of an auger to the die, of course, depends entirely upon the kind of material used, and must be determined by experimenting until the greatest capacity is gained at a reasonable horsepower. On the particular machine mentioned above, this distance from auger tip to die plate was ten inches, and three inches from the auger to the top of the bridges.

Heavy bridges on a die are merely excuses for incorrect location. They act as a baffle to the clay, cause bridge cracks in the material, and consequently must be placed a considerable distance from the die-plate, which again adds to the horsepower required. The closer the bridges can be set to the die-plate the less horsepower required. This is governed by the tendency of the material to knit together again, after being split by the bridge, and by the means devised to enhance this knitting property.

When the bridges in a die are correctly located so that the different streams of clay passing around and between

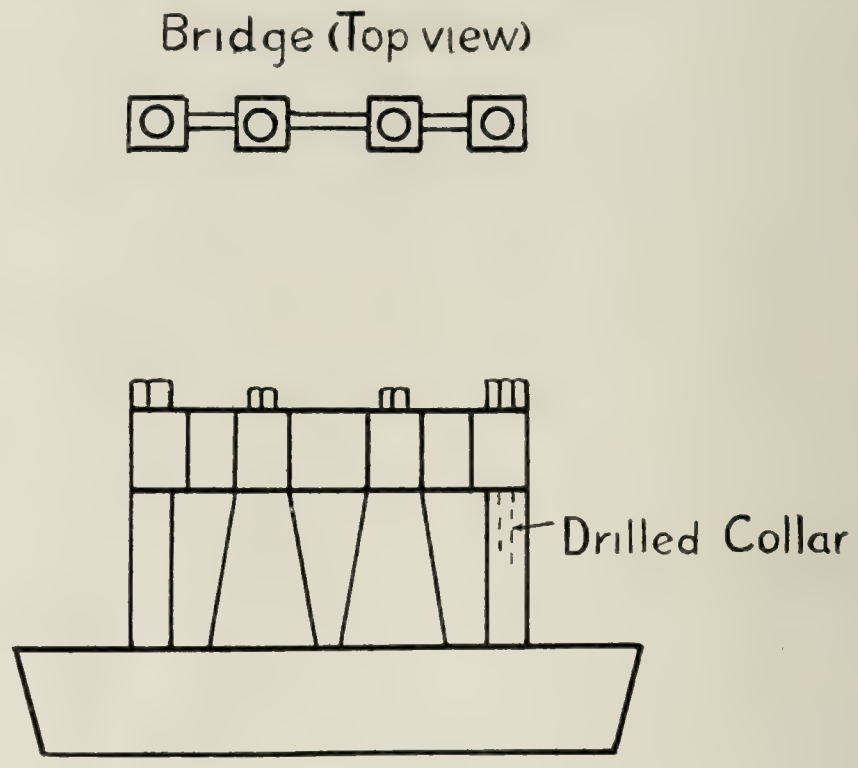


Fig. 4

the bridges and studs are exactly balanced in volume and pressure, very thin, light bridges with knife edges will hold the cores in their proper places without shifting. The location cannot be determined by any formula yet devised, but is found by experimenting and the use of common sense. Lighter bridges may also be used when braced by additional light bridges, and the light reinforcement will not reduce the capacity of the machine as much as one heavy bridge, having the added advantage of nearness to the die and prevention of bridge cracks.

Bridge cracks can be overcome to a certain degree by grooving the bottom of the bridges in alternate places

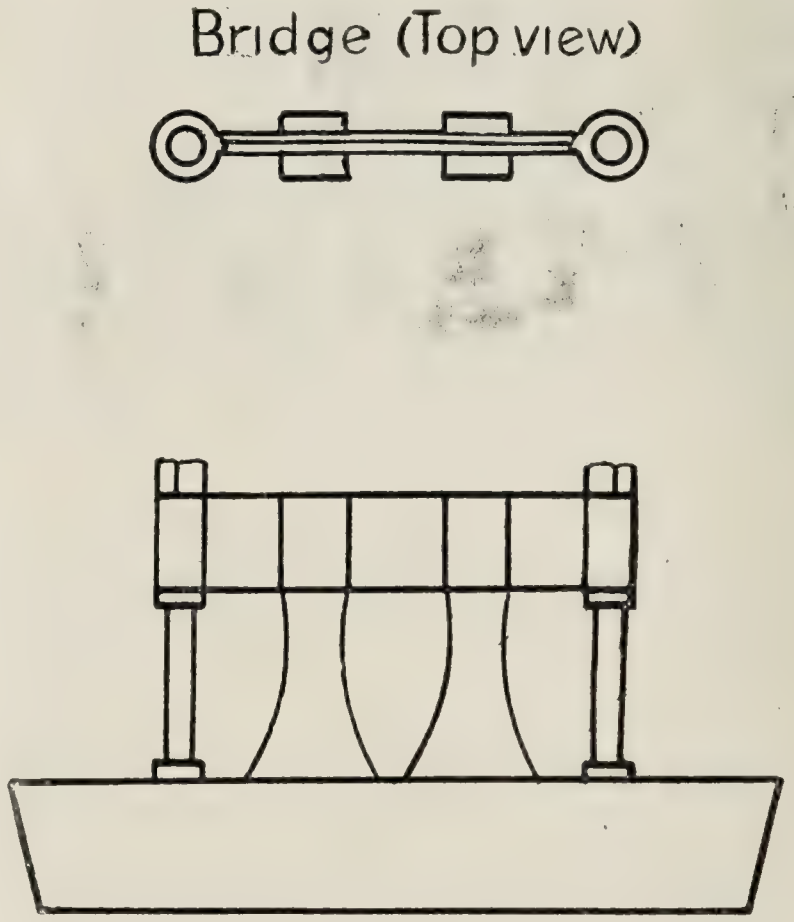


Fig. 5

with a file, giving a knitting action to the flowing clay, as shown in (a) in Fig. 9, or by winding a piece of curtain chain around the bridge at the location of the crack, as in (b).

Where large dies are used with heavy bridges, a saw-edged piece of steel may be pinned to the bottom of a bridge to tear the clay, as per (c). Another method is to

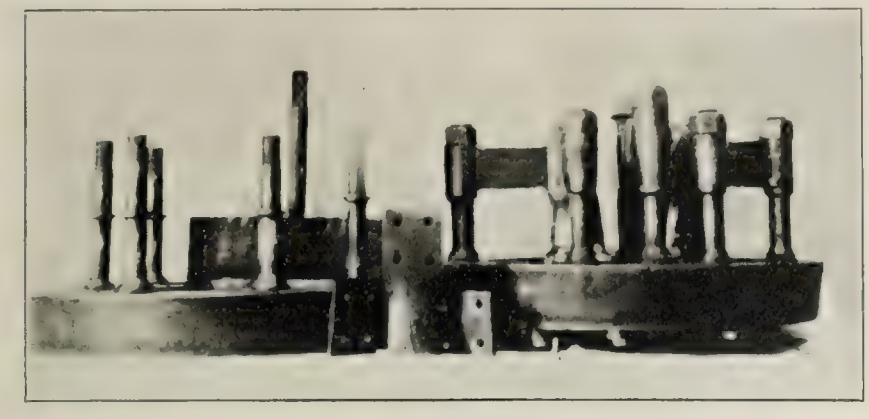


Fig. 6

barb the bridges and metal back of a die with a chisel, but this is not advocated, as it adds friction to the die.

The ordinary method of adjusting a die is to place a piece of metal on the top of a bridge located so as to check the flow in the section traveling faster than the rest of the bar. These pieces or baffles vary in size from a small flat piece of iron one inch square to plates sometimes two inches wide and six inches long. While this method is perfectly satisfactory in an emergency, or where a special order is being run, it is very poor policy for every day practice. It reduces the capacity of a machine greatly, and many times will strain a die so as to wreck it, breaking, by unbalanced pressure, steel studs 7/8 inch in diameter and twisting bridges out of shape and rendering them unfit for use. Baffles are also placed on the die plate, at the back, to stop fast flow on the sides. In this position they are quite often necessary for making special shapes with walls of unequal thickness.

When care and study are given to the proper location of bridges, their length, distance from die-plate, and the openings between bridge studs, baffling may be entirely done away with, as balanced pressure can be attained between all the streams of clay forced through them to form the bar. By making use of a few evenings to experiment

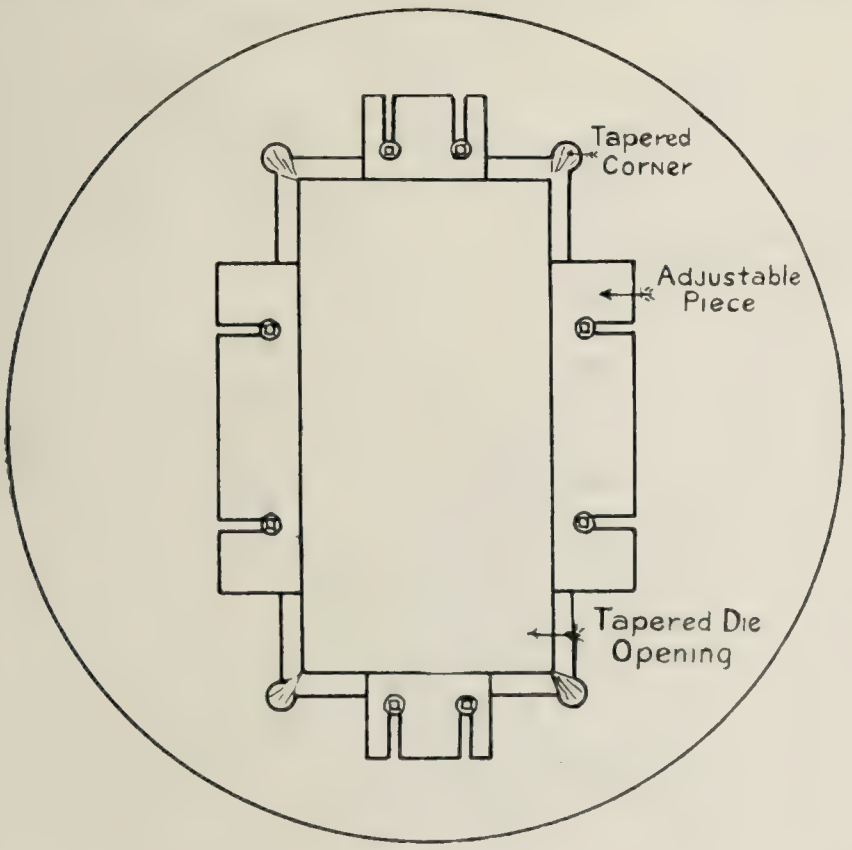


Fig. 7

with an old die a perfectly true bar can be caused to issue from the average hollow-ware die.

Fig. 10 shows the back of two dies. The one at the left has two baffles, while the one at the right has heavy sections in the bridges to act as baffles. In the die at the left the central bridge was moved down 3/16 of an inch, so as to divide up the cubical contents of clay flow evenly between the bridges and made longer to open the space between the studs. This speeded up the die and eliminated the baffle. By a like adjustment of the bridges the bottom baffle was also removed. This shows the importance of correct bridge location, which must be exact to the smallest fraction of an inch.

When a hollow-ware plant uses two or three hundred dies for the manufacture of the many shapes of fireproofing and building or drain tile, quite an item may be saved if a few pounds of metal could be done away with in buying the die-plate casting, and if there were no holes

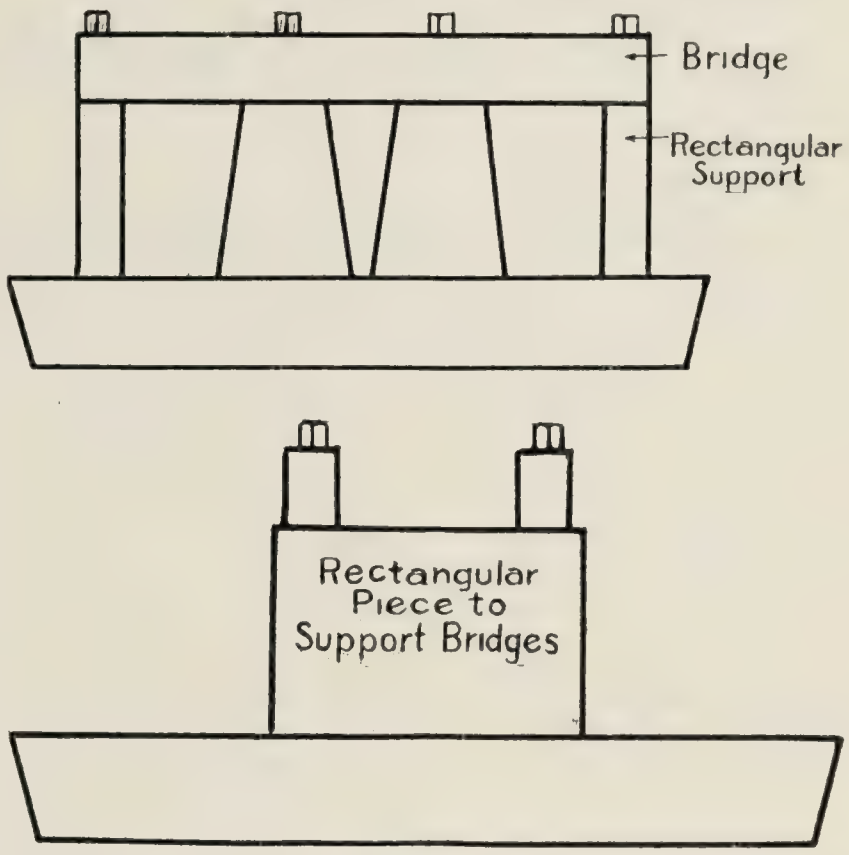


Fig. 8

to drill or fit to the front of the machine another saving would be effected. It is also advantageous to be able to shift a die to any position on the front of the machine, especially when both automatic and handcutters are used and cutters with tilted plattens. This may be attained if a steel ring with a round tapered opening be made to fit the front of the machine and the die plate be cast in circular shape with the same taper to the rim, so as to fit into this ring and be held in place by the pressure of the clay. The die acts simply as a cork in the barrel. It can be turned to the vertical or horizontal, or at any angle.

Fig. 11 shows the simplicity of such an arrangement, (a) being the die-plate and (b) the steel ring. Of its construction little need be said, but anyone who has used it could write volumes of its practicability, economy and adaptability to meet all conditions.

Our friends, the architects, have finally come to the conclusion that plaster and stucco will not stay on concrete walls, that metal lath rusts out thus shortening its life, that the cost of waterproofing wood lath is too great for its short-lived effectiveness, and, consequently, are using hollow-ware with dovetailed mortar grooves that will hold plaster or stucco firmly clinched on an impervious surface. Many concerns do not use the dovetailed groove, but simply scratch the surface of the tile by means of an old saw blade pinned to the sides of the die. This is poor

practice and at the present day will not aid the sales force very much.

The dovetailed grooving is put on by pinning pieces of 1/8x1½ inch angle iron to the sides of the die opening, having the grooves cut out, as shown in Fig. 12. These "scratches" are made as long as the width of the cores opposite which they are placed, and can be made very easily and renewed on the die at any time of the day. They wear out quickly, but the cost of the material and workman's time is not great enough to warrant using a harder material.

Having perfected a die so that it makes first-class ware at high speed and at normal horsepower, we must consider its life. The cost of constructing and adjusting a die

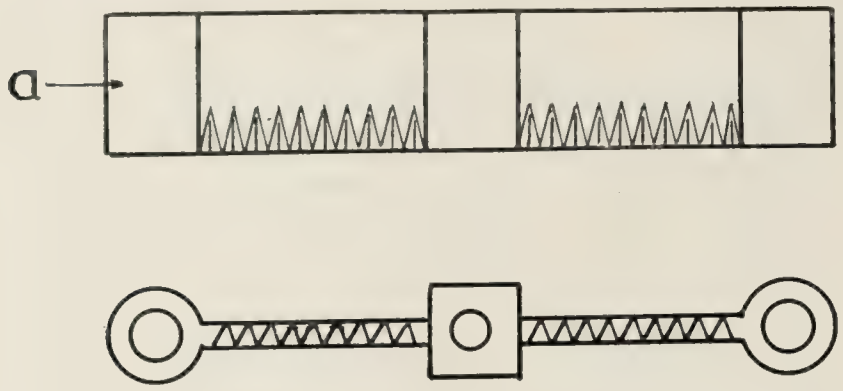


Fig. 9

sometimes runs into hundreds of dollars. Should it then wear out quickly a great loss is effected, in time spent in adjustment of new dies, perhaps cracked and broken ware during the period of adjustment, in the growing tonnage of shale or clay, owing to the ware having thick walls, added fuel in the dryer, added fuel for burning, reduction in the efficiency of workmen handling heavy ware, and increased tonnage on the cars to pay freight on. The wearing away of 1/16 of an inch on the sides and cores of a die on a machine turning out 125 tons of ware in ten hours will require five tons more shale per day to be mined at the pit, each day's wear then showing in reduced capacity and higher cost.

A plant in the Toronto (Canada) district is manufacturing fireproofing and Denison Interlocking Tile of an

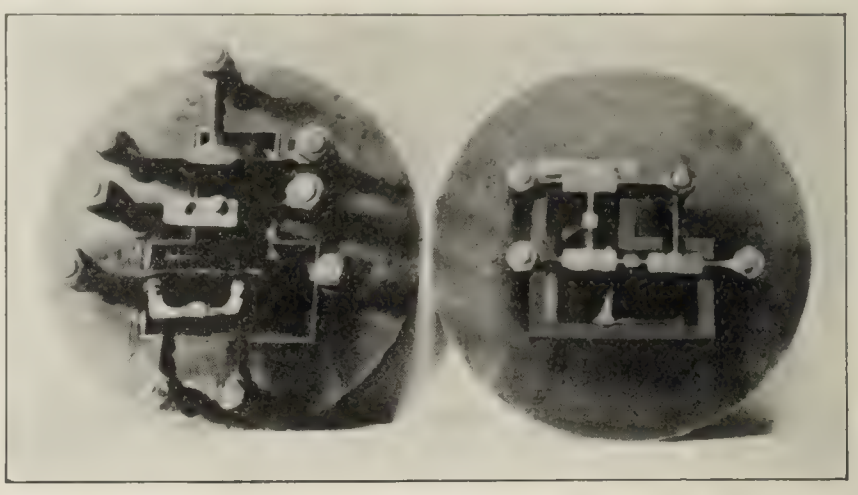


Fig. 10

exceedingly hard running shale—the Blue Hudson. This material alone will not run out of a brick die at more than two-thirds the speed of the average shale, and has been known to break four inch pug-mill shafts and cut steel gears through the friction set up in the barrel of a machine.

Up to about a year ago it had always been contended by clay workers that hollow-ware could not be successfully made from this shale. After some experimenting hollow-ware dies were constructed along the lines we have previously mentioned that would reduce this friction and compression without lubricants of any kind and turn out 125 tons of hollow-ware on one machine in ten hours. It was desired to keep one shape running from the machine for months at a time, but so great was the wearing qualities of the Hudson shale that a die would be completely worn out in sixty-eight hours actual running. The bridges and all metal back of the die increased in efficiency through this wear, but the cores and sides of the die wore away until it became impractical to use the die further. Approximately three weeks were required to construct and adjust the die, so that the necessity arose for some easy method of relining a die with adjustable wearing parts on cores and die plate. This was satisfactorily accomplished, so that the running life of the die was prolonged from sixty-eight hours to one month, and the adjustable liners, made from patterns or templates in the meantime, could be renewed in one evening. The dies were found to be increasing in speed, producing more ware per day as the excess metal on the cores and bridges wore away.

The die-plate was shaped out to admit a cast iron liner 3/8 inch in thickness all around. This was machined so as to give an easy driving fit in the die-plate and was held in position by being slightly tapered all around, counter sunk holes were drilled in this liner, as shown at (a) in Fig. 13, to admit a 5/16 inch counter sunk, flathead machine screw. The wearing parts, for lining the die, were made of a bar of Jessop's tool steel 2¼x3/16 inch, a cast steel, high in carbon and annealed so as to allow machining. This was sawed into proper lengths, dressed up in a shaper, and fitted into the cast iron liner with butt joints filed to a perfect fit. The liners being then drilled and tapered out 5/16 inch standard machine thread, so that they could be held in place by No. 18 machine screws. After fitting to the liner the pieces were taken out, heated up to a white heat in the blacksmith's forge, and dropped into a bucket of cold water to harden. As the liners are required to possess only one property—that of hardness—all ordinary methods of tempering tool steel will not apply, such as

watching for the proper color, tempering in oil, etc. The greater the extremes of heat and cold that the steel is subjected to, and the quicker this change or shock takes place, the denser and harder it will become. These liners may be hardened until they are as brittle as a piece of glass and will turn the edge of any file. Great care must be taken to clean up both sides of the steel evenly, or the thin pieces of steel will warp.

The liners for the cores may be made of the same material and can be pinned on the cores with four flathead

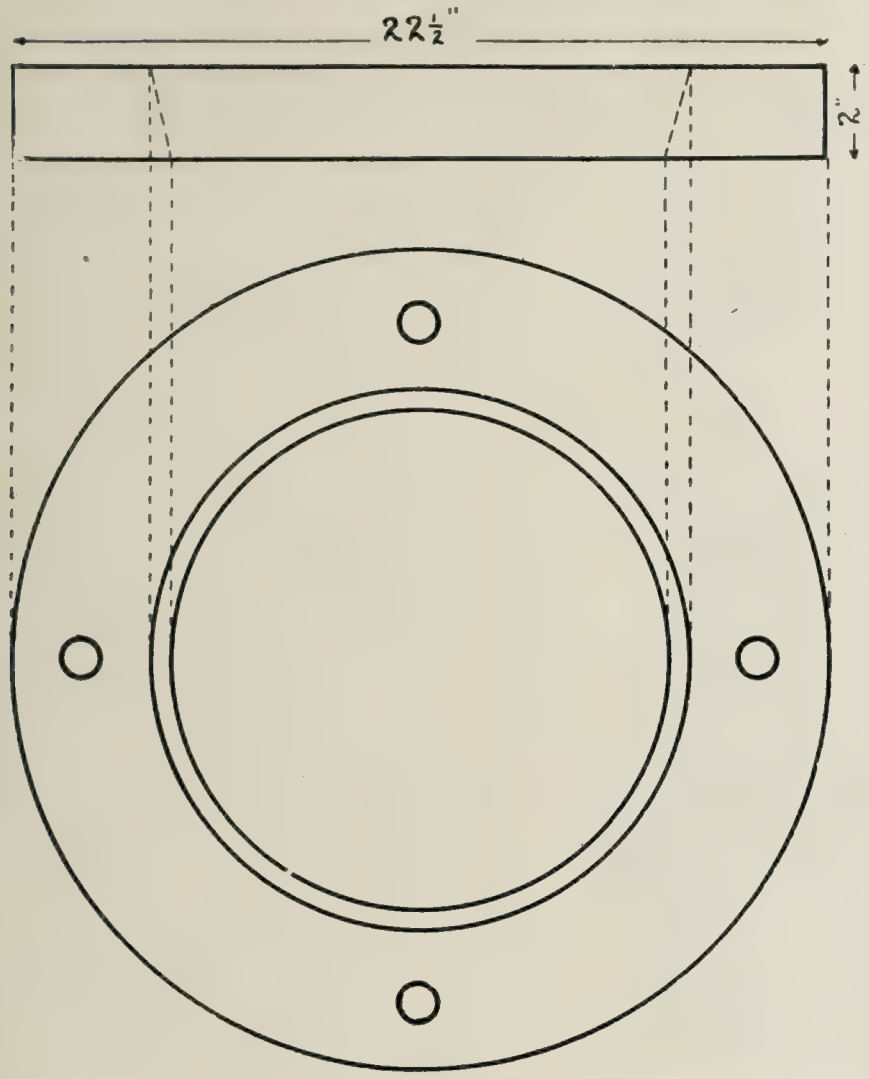


Fig. 11

machine screws. Care must be taken to countersink carefully for the perfect fit of the screw heads, as a slight depression soon causes a groove to wear, and shortens the life of the steel. At (b) in Fig. 13 are shown cores with liners attached. Small cores, as (c), too small to

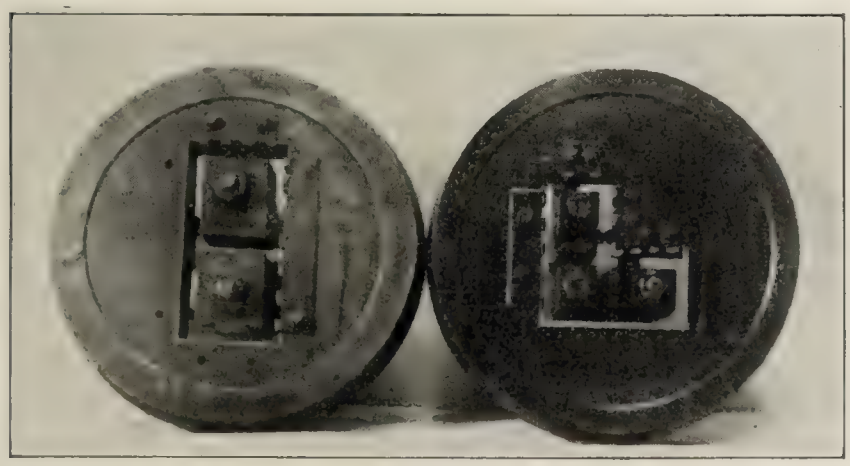


Fig. 12

admit of attaching steel wearing parts, may be made of old shafting and given a deep case hardening.

For the ordinary drain-tile die, steel liners could be cast and turned up in a lathe, so as to drive easily into the die plate. These, likewise, can be hardened and would render

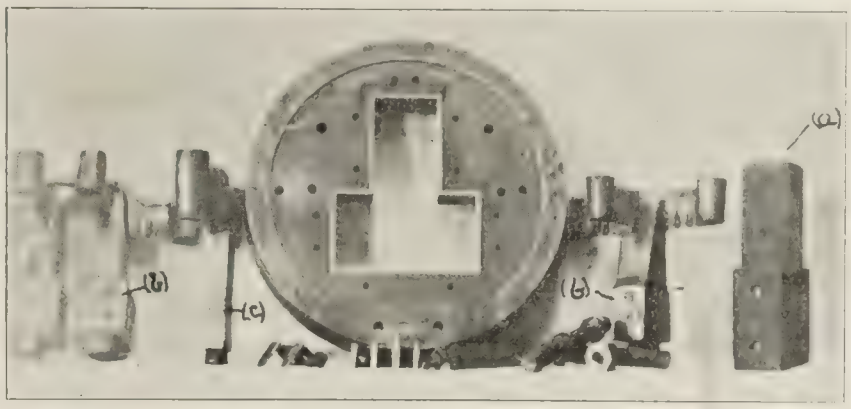


Fig. 13

long life and easy renewal to dies that many companies consider worn out and useless.

Fig. 14 shows a die-plate (a), liner tapered to wedge in plate (b) and tapered ring to drive on core (c), of a simple drain tile die. With some clays it becomes necessary to taper the sides of a die, consequently the method of relining we have described would not be satisfactory. A special hard steel alloy (such as may be procured from several automobile concerns) could be cast as a liner, to be fitted to the die plate, giving long life and easy renewal where this type of die is used.

The correct taper for the cores and sides of a die opening will not be the same for all shales or clays, and must

Fig. 14

be determined on the particular material to be used. This is done by building wooden dies and timing the speed of clay-flow through them. At the point where the material slips through the die at highest speed the correct taper will be found. From this data the metal dies can then be correctly designed and built.

Extreme accuracy in constructing dies and a rigid in-

spection of the work will eliminate a large share of the difficulties in making efficient dies. All holes should be drilled and reamed to a perfect fit, allowing no play or slack motion. All studs must be plumb and seated firmly and perfectly on bridges and die-plates. Cores must have a square, perfect seat. Should a bridge be not exactly true or properly located, it cannot be bent so as to give the core its proper location. Such work will not stay put, and can cause greater delay and difficulty than would be the case should the bridge be thrown away.

Measurements must be exact to the sixty-fourth part of an inch, and a first-class, high-priced machinist always earns his wage on the hollow-ware plant, as none but a first-class mechanic can construct an efficient die.

The photographs used in this article show a heavy die-plate and considerable metal back of the die. This is due to the fact that the material used is handled in a machine built powerful enough to do work that would smash an ordinary hollow-ware machine in short order. Hence powerful die construction is a necessity.

Real "Salvage" in Brick Walls



Pittsburgh's Market House After the Fire

While making no claims to a 87½ per cent salvage, the City of Pittsburgh, Pa., will rebuild the South side market house, recently damaged by fire, at a loss that is estimated at from $85,000 to $90,000. Unlike the walls of the Edison Phonograph Works at West Orange, N. J., the walls of the market house were of brick.

This building, built of brick about twenty-three years ago, shows the style of architecture in vogue at that time. It is far from being beautiful, according to modern standards, but it was built to stay, and it has given full proof of the adequacy of brick and mortar construction, when exposed to the heat of an ordinary conflagration. No steel frame work was used in the interior and the wooden posts and floors were as so much tinder. But the brick walls are, the building commissioners claim, intact, giving mute evidence of the superiority of brick over any other known building material.

A Correction

The Albion Shale Brick Company, Albion, Ill., is busy as usual turning out "pavers." Although the report has been circulated several times that this plant has been forced to shut down because of the lack of water, actual facts fail to substantiate these reports. The company claims to have one of the very few "evergreen" plants in Illinois, and states that it has been operating continuously since the day its machinery was started.

Terra Cotta Popular in Kansas City

The National Ornamental Terra Cotta Company, succeeding the partnership that operated under the name of the National Terra Cotta Company at Sixteenth and Manchester, Kansas City, Mo., has been incorporated with a capital stock of $250,000. The partnership had as its president Harvey Stiver, a leading contractor of Kansas City, who is also president of new company. It is the intention to offer stock, and to expand the resources of the company in order to increase its equipment. The company has recently completed the contracts for the terra cotta trimming on the Southeast High School, and on the million dollar Muehlebach hotel. Delivery for the Milton Moore school is now proceeding. The company also has the contract for the terra cotta on the Glover building, now under construction at Eighth and Wyandotte streets. The Muehlebach contract was in the neighborhood of $20,000, the first and second stories being almost entirely faced with this company's product. The terra cotta used was largely white matt-glaze finish, with some granite style. The incorporators of the new company are Harvey Stiver, Charles W. Lovitt, contractor, and J. L. Davies, chemist with the company.

"Dick" Minton in a New Position

F. R. Minton, formerly salesmanager for the Mexico (Mo.) Brick and Fire Clay Company, has been appointed manager of the firebrick department of the William E. Dee Company, with offices in the Stock Exchange Building, in Chicago. In addition to other well known refractories, "Dick" will handle the output of a firebrick plant located at Olive Hill, Ky., recently acquired by the William E. Dee Company.

Teaching Contractors More About Burned Clay

Adel Clay Products Company of Adel, Iowa, Holds a "School" to Teach Farmers and Contractors How to Use Its Products

THE ADVERTISING VALUE of demonstration was clearly shown in the School of Permanent Building Instruction held at the plant of the Adel Clay Products Company, Adel, Ia., February 16 to 19.

To H. R. Straight, superintendent of the Adel plant, is due the credit for originating this novel idea to demonstrate to farmers, contractors and architects the value of clay products in the construction of permanent buildings.

Regular programs were printed and distributed to the prospective delegates, so that when the morning of the 16th, "Home Building Day," arrived, there was a goodly number present to listen to the opening address by H. R. Straight on "Important Items to Watch in Buying Clay Products." Wallace Smith, of Adel, followed Mr. Straight and talked on "Proportions in Mixing Mortar." R. E. McNichols, of Adel, then gave a talk on "Figuring Freight on Various Products." Owing to the inability of J. Campbell Morrison, of Morrison and Thorne, architects, Des Moines, to be present, C. E. Eastman, said to be one of the oldest practicing architects in Des Moines, took Mr. Morrison's place on the program and gave an especially interesting address on architecture in permanent homes. A demonstration was then given by S. L. Wilson, of Waukee, Ia., in the use of texture tile. A part of a wall was built of this tile, showing corner, window and door frame construction. This demonstration was carried out very nicely and was very convincing of the merits of this tile to those who saw the demonstration. Another demonstration followed showing the application of pebble dash and rough coating on a hollow tile wall, this being performed by some of the contractors present who had had experience with this kind of work.

Wednesday, February 17, was given over to the discussion of silo construction, the following papers being read in the morning: "Important Items to Watch in Buying and Erecting Clay Products in Silos," by H. R. Straight and "The Construction of the Hollow Tile Silo and the Reason Why It Is the Best Silo for the Farmer," by Emile Cable, Cedar Falls, Ia. Two demonstrations followed the reading of these papers, one on "The Ingot Iron Door Form in Connection with Cross Tie Blocks and Door Reinforcing," by S. L. Wilson, Waukee, and "Making a Wire Straightening Device with Reel for Silo Reinforcing," by Wallace Smith, of Adel.

In the afternoon of the 17th, Prof. J. B. Davidson, of the Iowa State College at Ames, talked on "Permanent Farm Buildings and Why the Farmer Needs Them," in which he gave some very interesting information and figures which brought very forcibly to those present why the farmer needs permanent farm buildings. Prof. Davidson was followed by S. L. Wilson and Wallace Smith, who gave a demonstration on "Erecting the Single and Double Air Space Silo in Connection with the Ingot Iron Door Frame."

The morning of Thursday, February 18, was started bright and early by a visit to a neighboring farm where an 11,000-bushel corn crib constructed of hollow tile was shown. This crib has been in use for four years. A hog house was visited, as was also a twenty by forty-foot cement stave silo on the same farm, which showed very plainly that it was in the process of disintegration after being in service only three years. When the party returned to Adel, the following papers were read: "The Hollow Tile Corn Crib, Its History, Etc.," by H. R. Straight; "Reinforcing the Round and Straight Side Corn Crib," by R. L. Kaiser, Ames, and "Why Permanency Pays," W. B. Kinnick, Adel.

In the afternoon of the same day, Charles G. Cockerill, of Jefferson, Ia., owner of a 7,000-bushel tile crib and other hollow tile farm buildings, talked on "My Opinion of the Hollow Tile Corn Crib After Three Years of Use." Three demonstrations were then given, one by S. L. Wilson, in which a section of a hollow tile corn crib was built to a sufficient height to show very clearly to every contractor present each detail of construction of the crib. "Making a Door Form for a Crib" was demonstrated by Wallace Smith, and "The Laying of the Wall in the Straight Side Corn Crib" by R. L. Kaiser and S. L. Wilson.

In the evening a special moving picture show was given for the benefit of those present at the "school," in which special pictures showing the advantages of permanent construction and other pictures of a lighter character were thrown on the screen.

A discussion on the construction of barns, hog houses and chicken houses occupied the morning of the last day, Friday, February 19, but because of the necessity for some of the visitors leaving early, it was decided to "dismiss the school" at noon, and so the reservation of a special train, which was to take the party to Des Moines for an evening's entertainment, was cancelled.

The "school" was a thorough success, a little less than one hundred visitors being present. It was given for the purpose of getting the contractors who are handling clay products in Iowa, and especially those turned out by the Adel plant, together to exchange experiences and to learn new methods in burned clay construction that are constantly being evolved. The originator of the "school" reports that this aim was accomplished without a doubt and that plans are being made to hold a similar gathering next year.

There is no doubt but that the "school" did much to "boost" clay products on the farm, and Mr. Straight says in regard to next year's meeting: "Were we to work the whole year on it and secure no more results than we secured this year, we would be well satisfied."

Western Ontario Clayworkers Favor Publicity

The need of more promotion and better publicity for the clayworking industry in Western Ontario was strongly emphasized at the annual convention of the Ontario Claymakers' Association, held at Chatham on February 10 and 11, 1915. Publicity for the industry, publicity for its products and publicity for the association and its work, all were urged, and resolutions favoring more extensive advertising were unanimously passed by the claymakers in attendance.

The discussion of this subject and the ensuing resolutions called attention to the fact that with the convention, and in connection with the Ontario Corn Show, held in the 24th

Regiment Armory, a fine exhibit of clay products, the output of Western Ontario factories, was shown. This exhibit included, also, examples of the beneficial results accomplished by underdrainage, on which large sums have been spent by Western Ontario farmers in recent years, and which has resulted in a wide extension of the tile manufacturing industry in this part of the province.

The sessions were presided over by the president of the association, Augustus Wehlann, of Rodney, Ontario, who cordially welcomed the delegates.

On the opening day of the convention, "Clay vs. Cement" was the subject of an interesting paper by Mr. McCready, of Lyons, Ont. In his paper, Mr. McCready urged more extensive advertising of the association and its purposes.

After Mr. McCready's paper, a business session was held in which the following officers were elected: President, Walter Clark, Corunna, Ont.; secretary, Alfred Wehlann, Rodney, Ont.; first vice-president, David Martin, Thamesville, Ont., and second vice-president, Warren Leatherdale, Dresden, Ont. The by-laws of the association were amended so that in the future the executive committee will consist of the president, secretary and one other member of the association, instead of three others, as heretofore.

At the Thursday morning session, February 11, the 1916 meeting was discussed, and though this matter was left to the executive committee, the feeling was strongly in favor of divorcing the association from the Ontario Corn Growers' Association, and holding the annual meeting at a separate time and place. The month generally favored was February and the city selected will be either St. Thomas or London.

Addresses were then given by Aaron Hill on "Drying Clay Wares" and by Mr. McCready on "Burning Clay Wares." The concluding address of the convention was given by J. L. Wilson, of Chatham, on "Standardization of Brick," an important problem for the manufacturers of southwestern Ontario.

Oregon Clayworkers Organize

At the annual Farmers' "Home Makers" and Conference Week, held at Oregon Agricultural College, Corvallis, Ore., February 1 to 6, the clayworkers of Oregon held a meeting.

The meeting was held on the morning of February 3, and after electing Prof. Ira. A. Williams chairman, several papers were read. Dean J. A. Bexell chose for the subject of his paper "The Advertising and Marketing of Clay Wares." He was followed by T. S. Mann of the Pacific Stoneware Company, who read a paper on "Success in the Clay Business." "Factors Determining the Quality of Building Brick," was the topic of a paper read by Prof. Williams, who was followed by Dean G. A. Covell on "The Use of Steam in Clay Plants." After the reading of the last mentioned paper, an inspection was made of the ceramics laboratory and museum of the college.

A conference on drainage was held on the same morning in another building; several papers were there read on this subject. This session was held for the benefit of Oregon farmers in drainage matters and many problems of interest were discussed.

In the afternoon the clayworkers and those interested in drainage and drain tile met in a joint session.

There was a large number of clayworkers present at both sessions and the suggestion that they organize a permanent body was heartily approved. W. E. Wilson of the Salem Tile and Mercantile Company, Salem, Ore., was then elected president and S. Geijsbeek, of the Geijsbeek Engineering Company, Portland, Ore., was elected secretary and treasurer of the new organization, which will be known as the Oregon Clayworkers' Association. W. E. Fields of the Fairmont Brick and Tile Company, Eugene, Philip Withycombe, of the Yamhill Tile Works, Yamhill, and T. S. Mann, of the Pacific Stoneware Company, Portland, were elected directors.

The new association is considering conducting a campaign to create a bigger demand for clay products in Oregon and will certainly do so, if it is able to get sufficient support from its members.

The next meeting of the association will be held during the latter part of March in Salem, Ore., and the secretary cordially invites all clayworkers in Oregon to attend this meeting, so that they may get in closer touch with the association. Since the success of the new organization's work will depend upon the co-operation received from Oregon clayworkers, they are urged to join the movement and give it their hearty support.

New England Material Men Hold Convention

The clayworking industry was well represented at the annual meeting of the New England Builders' Supply Association, held at the American House, Boston, Mass., February 18. Charles M. Kelly, a dealer in brick and clay products, and president of the association since its founding, was re-elected for another term.

The lien law was the principal subject of discussion at the convention, the newly elected vice-president-at-large, Ralph H. Whitney urging the members to support the bill now in the Massachusetts legislature giving sixty days in which to place liens. President Kelly and other officers said that while the association was supporting the Massachusetts law at present, if a similar question came up in any other New England state the association would lend its aid.

The matter of credits and of shortening the present term of credit was taken up, but all agreed that the lien law, if passed, would settle this question in Massachusetts.

At the banquet which was held in the evening, Williams W. Whitcher of the Jackson Newton Company of Boston and Cambridge spoke on "Liens."

The association is considering plans for increasing its membership influence, and to this end has under consideration the hiring of a paid secretary. President Kelly asked how many would contribute from $25 to $100 for a period of three years for this purpose. He started by saying his firm, the James C. Goff Company of Providence, would contribute $100 a year for three years. Several other members said they would be willing to contribute. No action was taken, however, and the question was left with the executive committee.

The selection of the convention city for next year was left to the officers of the association.

The officers elected for the coming year were as follows: President, Charles M. Kelly, of the James C. Goff Company, Providence, R. I.; vice-president-at-large, Ralph H. Whitney, of the B. F. Marsh Company, Worcester, Mass.; secretary, F. H. Kingsley, of the Borden and Remington Company, Fall River, Mass.; treasurer, S. F. Hammett, of the Taunton Teaming Company, Taunton, Mass.

Mantel and Tile Dealers Hold Convention

The Interstate Mantel and Tile Dealers' Association held its twelfth annual convention at the Hotel Belvedere, Baltimore, Md., February 9 to 11.

The convention was opened on the morning of the 9th with an address of welcome which was delivered to the two hundred delegates present by Robert E. Lee, secretary to Mayor Preston of Baltimore. Mr. Lee spoke for the mayor, who was out of the city, and he created much enthusiasm among the delegates by the hearty and unlimited welcome which he extended. Following Mr. Lee, Robert Beck, president of the association, submitted his annual report and urged the members to greater activity in

the expansion of trade, especially to foreign countries, in the coming months. The association then went into an executive session and trade matters were talked over for more than an hour.

The second session of the convention on the 10th, began with an open meeting at ten o'clock in the morning. Unfinished routine business was completed. After this meeting, the wives of the delegates and ladies in the party were conveyed in special cars to the Maryland Country Club, where they were entertained at luncheon.

In the afternoon at four o'clock, F. W. Walker gave an illustrated lecture at the Belvedere Hotel on "Tiles for Sanitary and Decorative Construction." Photographs of meat markets and stores that had been tiled were shown. One of the best market houses in the United States, the California Market in San Francisco, Mr. Walker said, was tiled throughout and had proved to be the best investment the City of San Francisco ever made.

In the evening a theatre party was given for the delegates and their guests at the Maryland theatre.

The final session of the convention was held on the morning of the 11th when the election of officers for the ensuing year took place. In the evening a banquet was given at the Hotel Belvedere, followed by a dance.

Anspachs Bid Farewell to Tilemaking

By exchanging a tile plant for Canadian farm land, J. P. Anspach and his son, W. W. Anspach, cease to be makers of burned clay. The farm consists of about eight hundred acres of virgin tobacco, onion and celery land, thirty-five miles east of Detroit in the province of Ontario. The tile plant is located at Edgerton, Ind., and is equipped to manufacture drain tile, hollow building tile, fireproofing, round flue lining and similar products. The new owners of the plant are A. C. Jones and D. W. Gunn, of Toledo, Ohio, and they expect to operate to full capacity at once. The new company will be known as the Edgerton Tile Company. The former owners look for a busy season for the new occupants during the coming spring and summer.

J. P. Anspach, the senior partner of J. P. Anspach and Son, will retire from active business, while the junior partner, W. W. Anspach, will devote his entire time to the Maumee Valley Land Company, in which he is a large stockholder.

Brickmakers Back "Build Now" Movement

A communication urging that immediate steps be taken toward the construction of the proposed third district sewer in Paducah, Ky., and that the sewer be built with brick, has been addressed to the city commissioners by the Hill and Karnes Brick Company, the Paducah Brick and Tile Company and the Paducah Bricklayers' Union.

The communication gave three specific reasons why brick should be used in the construction of the proposed sewer, instead of concrete—the material now under consideration. They are:

1. It is a scientific fact that burned clay is the best material that can be used for sanitary sewers, as it is more resistant to the deleterious effects of the sewer acids than other materials, particularly concrete.
2. The cost of brick is as low or lower than concrete.
3. Eighty per cent of the cost of brick is in the labor used in their making, and these brick are made by Paducah labor exclusively and in plants owned and operated by Paducah citizens and taxpayers.

The first and second district sewers in Paducah were cited as examples of the enduring quality and satisfactory service of brick for sewer construction.

The communication suggested that, while the river and weather conditions precluded any idea of immediately beginning the construction of the new sewer, it would take some time to draw up contracts, get bids and complete other arrangements for construction to begin and the matter of making these arrangements should be immediately entered into, so that when conditions do become more favorable, all arrangements necessary for the beginning of the work will have been completed.

The proposed construction of this sewer has been under discussion for some time and the brickmakers and bricklayers are asking that something be done to get the project under way, especially at this time. One of the commissioners expressed himself as agreeing with them and suggested that steps be taken to start work on the sewer at once. Immediate action, however, was deferred until a report could be had on the acquisition of some yet unacquired right of way.

Chattanooga Manufacturers Open Exhibit

The Chattanooga Manufacturers' Association ushered in 1915 with the usual observance of "open house" on January 1 and also with the introduction of a plan to increase results from the permanent exhibit of Chattanooga—made goods which is so educational and spectacular a feature of the organization's building. Factories of all association members were closed New Year's Day so that employes and their families could enjoy a holiday and, if they wished, visit the exhibit and see how their handiwork looks on dress parade. The invitation was extended to the whole public, and was heralded through the press. Also a brass band toured the city in a street car December 31, the car bearing streamers advertising the event. Many hundred people visited the exhibit during the day and evening.

The innovation referred to is in the nature of a follow-up system to increase the effectiveness of the exhibit and make it as fruitful as possible in new business for the manufacturers. The first step in that plan was to compile and issue a directory of the association. This has been made a very interesting and complete little publication. It presents a tabloid history of the association. Then follows the list of members by firms, in connection with each name being the officers and products of the factory. For reference, an alphabetical list of Chattanooga made goods, or rather those made by members of the association, is printed in the back of the directory. Opposite each item is a key number, in some instances several numbers. Similar numbers appear in the list of firms. So, to locate the manufacturer of a given item the process is simple. Look for the article in the alphabetical index, note the key number, and refer to the firms designated by those numbers.

To every out-of-town man who visits the exhibit and registers, one of the directories will be sent a few days later. Accompanying it will be a personal letter thanking him for the visit and inviting patronage of the firms listed in the directory, whenever he is in the market for goods made by them. The letter will also set forth that the Chattanooga Manufacturers' Association, representing many millions of invested capital, stands sponsor for the business responsibility and good faith of its members.

Auburn Wagon Company Official Dies

Max Robinson, general manager of the Auburn Wagon Company, Martinsburg, W. Va., is dead. He passed away, after a brief illness, Sunday, January 31.

The Letter-Box

Has Been Omitted From This Issue on Account of the Space Devoted to the National Brick Manufacturers' Convention. In the March 16 Issue

It Will Be Well Worth Reading.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

SCARCELY TWO MONTHS have passed since the Interstate Commerce Commission handed down its decision in the "five per cent" rate increase case in which the eastern railroads were given permission to advance their rates on nearly all commodities.

Encouraged by the action of the Commission in the case of the eastern roads, the railroads operating in what is known as the Western Classification territory, or the western roads, are preparing to make application before the Commission in March for the privilege of advancing all of their rates ten per cent, or just double the advance that has been allowed in the eastern territory.

The hearings on this proposed advance by the western roads will be held before special examiners of the Commission in Chicago, and because of the success of the eastern roads in securing favorable action, it looks very much as though the petition of the western roads will be treated in a like manner, although they may not be allowed to raise their rates as much as ten per cent.

The situation is such that it merits the fullest attention on the part of all clayworkers operating plants in the Western Classification territory, in order that they may protect themselves against any exorbitant increase in freight rates, and also that they be advised of any immediate advance, so that same may be taken into consideration in the making of future contracts for clay wares.

Claims and Reparations

The Ludowici-Celadon Company, of Chicago, Ill., has just entered a complaint with the Interstate Commerce Commission against the Illinois Central Railroad Company and a number of other carriers. The complaint states that on August 30, 1912, a shipment consisting of two carloads of roofing tile was made from Chicago Heights, Ill., to Daytona, Fla., on which the freight charges were $168.30 and $140.23 respectively, and that the road is now asking for $41.98 undercharge. They claim that not only the undercharge, but the original rate, was "unjust and unreasonable," and they ask for an investigation of the whole matter.

The Duffney Brick Company, the Mechanicsville Building Brick Company and the Troy Brick Company, of New York, have just filed a complaint with the Commission against the Boston and Maine Railroad Company, et al. An attack is made in the complaint against the present rates on common building brick from Troy and Mechanicsville, N. Y., to all points in trunk line territory. The complainants claim that the rates are "excessive" and that the petitioners are subject to great disadvantages because of these unjust rates. They ask for an investigation in the matter and also that new and more just rates be put into effect to and from said points.

The Reliance Brick and Tile Company, of Belle Plaine, Iowa, has entered a complaint with the Commissioners against the Illinois Central Railroad Company, the Chicago, Burlington and Quincy Railroad Company and the Chicago and Northwestern Railroad Company. It is stated in the complaint that on January 27, 1913, through December 2, 1913, shipments were made from Herrin and Christopher, Ill., to various points set forth in the complaint and that the rates on these shipments were "unjust and unreasonable." The brick company asks for reparation for the overcharge.

The Philadelphia and Reading Railway Company have been made additional defendants in case No. 7517 of the American Enameled Brick and Tile Company, in its case against the Raritan River Railroad Company, et al.

Revised brick rates from Chattanooga, Tenn., have been allowed to E. H. Hinton, Agent, on his application, No. 9831, on behalf of carrier parties to his I. C. C. tariff No. A-64. He is authorized, respecting rates on brick from Chattanooga, Tenn., to points in Georgia and Florida, to revise the commodity descriptions covering brick, as shown on pages, 12, 14, 15, 17, 19, 20, 21, 23, 25, 27, 33, 37, 39, 41, 49, 51 and 58 of the said tariff to read as follows:

"Brick, viz: (See note 18 of Tariff.) Common, pressed and paving, straight C. L., and pressed brick mixed with common brick, minimum weight 40,000 pounds C. L."

And the commodity description covering the same traffic as shown on page 53 of the said tariff has been changed to read the same as the above, save that 50,000 pounds is substituted for the 40,000 above.

The following reparations have been ordered since our last issue by the Commissioners to manufacturers of clay products:

Washington Silicate Brick Company vs. the Baltimore and Ohio Railroad Company, et al. A refund of $19.13 was allowed on account of unreasonable charges collected on one shipment of brick, made from Terra Cotta, D. C., to Frazer, Pa., on January 7, 1914.

A. M. DeBolt and J. B. Beard, Jr., vs. the Wichita Falls and Northwestern Railway Company, et al. A refund of $52.30 was allowed on account of an unreasonable rate applied on one carload of brick made on June 2, 1913, and on another carload of brick made on June 23, 1913, from Frederick, Okla., to Burkburnett, Texas.

National Fire Proofing Company vs. the Hocking Valley

(*Continued on page* 488.)

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Data That Will Prove Valuable in Building Construction

THICKNESS OF FOUNDATION WALLS (KIDDER)

Height of Building	Dwellings, Houses, etc.		Warehouses	
	Brick	Stone	Brick	Stone
Two Stories	12 or 16 in.	20 in.	16 in.	20 in.
Three "	16 in.	20 in.	20 in.	24 in.
Four "	20 in.	24 in.	24 in.	28 in.
Five "	24 in.	28 in.	24 in.	28 in.
Six "	28 in.	32 in.	28 in.	32 in.

BEARING POWER OF SOILS (BAKER)

Kind of Material	Bearing Power in Tons per Square Ft.	
	Minimum	Maximum
Rock—the hardest—in thick layers, in native bed	200	..
Rock equal to best ashlar masonry	25	30
Rock equal to best brick masonry	15	20
Rock equal to poor brick masonry	5	10
Clay on thick beds, always dry	4	6
Clay on thick beds, moderately dry	2	4
Clay, soft	1	2
Gravel and coarse sand, well cemented	8	10
Sand, compact and well cemented	4	6
Sand, clean, dry	2	4
Quicksand, alluvial soils, etc	0.5	1

Note: The building code of New York, N. Y., specifies the following as the maximum permissible loads for different soils:

"Soft clay—one tone per square foot; ordinary clay and sand together, in layers, wet and springy, two tons per square foot; loam, clay or fine sand, firm and dry, three tons per square foot; very firm, coarse sand, stiff gravel or hard clay, four tons per square foot."

Mine Accident Contains Valuable Lesson

The recent mine disaster in the Gurney Clay Company's mine, near Franklin, N. C., is a warning against negligence to every clay mine superintendent and operator.

There are two methods of working clay mines in North Carolina. One is by round shafting and timbering and the other by open cut working. The open cut method was being used by the Gurney Clay Company, whose mine has been in operation since May, 1911, and who generally have employed from thirty to forty men. The accident occurred in an open cut about three hundred feet long. The width of this cut at the bottom varies from twenty-four to seventy-five feet;

at the top from fifty to one hundred feet. The banks of the cut are from twenty to fifty feet high.

The report of the accident made by Special Deputy Mine Inspector R. D. Sisk, fixes the blame for the accident, which caused the death of one man and the injury of two others, upon Mine Boss W. N. Allman—who paid the penalty with his life.

The tragedy was caused by what is known as a "slicker." In Deputy Mine Inspector Sisk's report a "slicker" is defined as "a parting seam that runs through the ground in different ways where the soil will not close together. These slickers can usually be detected and guarded against by experienced miners."

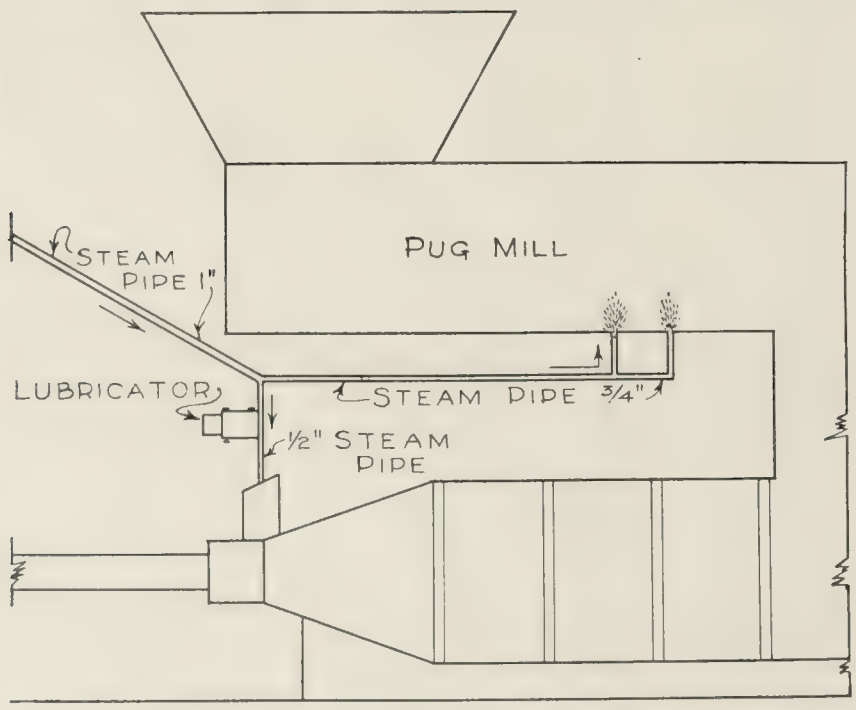
"The slide causing the disaster," reads Mr. Sisk's report, "occurred about 8:30 in the morning, on January 9, and fell from the right-hand bank, looking up the hill and well up towards the head of the cut. I find from the evidence that a crack, or "slicker," had appeared in the right-hand bank immediately above where the men were working on Thursday morning, January 7. That this crack or "slicker" was called to the attention of W. N. Allman, the mine boss, on Thursday by some of the hands. That on Friday, January 8, Mr. J. W. Gurney, general manager of the company, visited the mine and in the presence of the hands told Mr. Allman that this particular place was dangerous and to remove the loose dirt at once."

The mine boss failed to carry out these instructions. On Saturday a crew of eight men was at work in the cut when the slide came down, burying the mine boss completely and partially covering two of the others. The men were soon dug out, but Mr. Allman had suffered injuries from which he later died.

The Gurney Clay Company has adopted every precaution to avoid a similar tragedy at its mines.

A New Method of Steam Lubrication

It is generally known that the hotter a die is, the less friction there is to the clay bar in passing through it. Nearly every one who has ever worked around a clay plant, also knows that the more lubrication that can be added to the die, the better will be the column and the greater will be the reduction in horsepower necessary to force the column through the die. The saving in wear and tear on the machine by reducing the friction is also by no means a small item to be considered.



But there is a limit to the amount of lubrication that can be applied to the die, and so we have learned on our plant that if the clay can be heated before going through the machine, cracking in the ware is reduced to a minimum and its drying is greatly aided. The preheated clay helps the die lubrication and makes for efficiency in the operation of the machine by reducing the friction of the passing clay.

Such an arrangement is shown in the accompanying illustration. A one inch steam pipe leads to the brick machine, while a three-quarter inch pipe in run under the pug mill. The clay is heated in the mill to a temperature, while not too hot to inconvenience the off-bearers in handling the ware, yet warm enough to prevent them from holding it in their hands.

The heated clay passes from the mill to the machine and thence through the die, to which is attached the usual type of oil lubricator. We have found that it does not require over two quarts of black oil a day to lubricate the die properly. This is accomplished by preheating the clay with steam, and we can safely say that the friction in our machine is reduced considerly, while our ware has been greatly improved in quality.—R. C. Gangewere, Chattanooga, Tenn.

Suggestions for Laying Terra Cotta

Terra cotta should always be set in either natural cement or Portland cement, mixed with sand, and in about the same way as stone is set. As soon as set, the outside ot the joints should be raked out to a depth of three-quarters of an inch to allow for pointing and to prevent chipping. The terra cotta should be built up in advance of the backing, one course at a time, and all voids, except those projecting beyond the face of the wall, should be filled with grout or mortar, into which brick should be forced to make the work as solid as possible. All blocks not solidly built into the walls should be anchored with galvanized iron clamps, the same as for stonework, and, as a rule, all projecting members over 6 in. in height should be anchored in this way. After the walls are up, the joints should be pointed with Portland cement colored with a mineral pigment to correspond with the color of the terra cotta. The pointing is done in the same way as in stonework, except that the horizontal joints in all sills and washes of belt courses and cornices, unless covered with a roll, should be raked out about two inches deep, calked with oakum for about 1 in., and then filled with an elastic cement.

The weight of terra cotta in solid blocks averages 122 lbs. per cubic foot. When made in hollow blocks 1½ in. thick, the weight varies from 65 to 85 lbs. per cubic foot, the smaller pieces weighing the most. For pieces 12 by 18 in. or larger on the face, 70 lbs. per cubic foot should be a fair average. The crushing strength of terra cotta blocks in 2 in. tubes varies from 5,000 to 7,000 lbs. per square inch. Hollow blocks of terra cotta, one foot high, unfilled, have sustained 186 tons per square foot. From these and other tests I would place the safe working strength of terra cotta blocks in the wall at 5 tons per square foot when unfilled, and at 10 tons per square foot when filled solid with brickwork or concrete. If it is desired to test the strength of special pieces, two or three small pieces should be broken from the blocks and ground to 1 in. cubes, and then tested in a machine. Sould the average results fall much below 6,000 lbs. the material should be rejected.—"Building Age."

Goldner Secures a New Patent

On February 16, the United States Patent Office issued letters patent (No. 1,128,597) to George E. Goldner, of Fort Dodge, Iowa, covering means whereby manually-controlled pressure can be utilized for finishing the end edges of hollow green tiles, left rough by the cutting off device, while said tiles are being transported in vertical position on the off-bearing belt, from the cutting off device to the drier cars.

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

ONE WINTER'S MORNING, years ago, the name "Ashtabula" was flashed around the world in connection with one of the most disastrous railway wrecks ever know. A train on the New York Central had gone through a bridge at Ashtabula, Ohio, and many persons lost their lives.

Since that time Ashtabula has won a permanent position on the map and has become famous for manufactured products. In no line is Ashtabula's reputation more honestly merited than in the manufacture of paving block, as it is the home of one of the best, most complete and most convenient plants in the whole of the United States. Equipped from the start to produce quantity and quality, this Ashtabula plant is making good and is spreading the name and fame of Ashtabula broadcast. In no single particular has it fallen below what was expected of it and it is today a vindication of glorious magnitude of the indomitable energy and confidence of its promoter and manager.



N. C. RALPH
The Man Who Makes the "Bulah" Block

When N. C. Ralph conceived the idea of building a paving brick plant at Ashtabula, a lot of people of that place said "fine," and promised the enterprise support. Mr. Ralph thought he knew good clay when he saw it and so he saw, in his mind's eye, a successful plant operating full time and turning out a superior paving block.

Having confidence in the support promised him and in the shale, he got busy, feeling sure of success. He sent some of the clay to be tested by those who were recognized authorities on clay and in due time he got a report. This authority made an able report which "boiled down to the bone" was, "forget it." This knock-out blow would have put a less aggressive man down and out, but not so N. C. Ralph.

Uncle Sam's mail carrier hadn't gotten as far as the corner after leaving this discouraging missive, before Mr. Ralph was headed for his shale bank with a new lot of barrels and before night a half car of the material was on its way to the American Clay Machinery Company at Bucyrus, Ohio, to be tested.

In due time there was delivered by express to Mr. Ralph at Ashtabula some samples of paving block made from this shale. Mr. Ralph opened that package with about as much enthusiasm as he would have tackled a can of dynamite. Having had four adverse reports, he felt that "bets" were against him, but he was "game" and proceeded to "know the worst." When his eyes beheld those paving block and his ears caught the metallic ring when he struck them together, he pinched himself to see if he was really awake—for here, in his hands, were the very brick he had so often seen in his dreams of success. He came out of his trance, however, when one of the ten pound pavers slipped from his hands and lit squarely on his foot.

Fortified with good samples of mighty good block, Mr. Ralph started to organize his company and then found other complications. Men who had said "fine" asked him to call again, and others who had said "sure" had invested in something else, but a little thing like "pleuro no money" did not stop him and he sought other avenues to capital and found them.

These were only a few of the troubles he found between anticipation and realization. It was a longer way than the "long way to Tipperary" but the Ashtabula Shale Brick Company plant is right there today as an evidence of what Mr. Ralph has done.



The Machine Room of the Ashtabula Plant

The plant is located on the New York Central Lines which gives it the best of shipping facilities. The shale bed is seemingly inexhaustible. The shale is dug by steam shovel and is brought up to the plant where American dry pans, set on solid masonry, reduce it for the pug mill. From the No. 29 American pug mill it goes to an American No. 65 auger machine and then through the cutter to a battery of American represses. Loaded on American cars the brick go to an Amer-

ican waste heat dryer and then to the kiln. The finished blocks are loaded direct from the kiln to the railway cars, the entire arrangement of the plant being as convenient as plans made by the American Company usually are. The power house is a model of convenience. In a word the whole plant has been designed and built for permanent, profitable and economical manufacturing and not a day passes but that new evidence is seen of the wisdom of right construction. The plant operates like clock work. Every unit performs as it should and without trouble or an extra expense. All the buildings are fire proof being built of brick and steel. The machinery is all set on solid masonry which increases its length of life and efficiency. The plant is ideally located with an unlimited supply of shale. Judged by its production, realty holdings, construction and equipment it is conservatively estimated that the plant is worth between $150,000 and $175,000. It is certainly a great credit to Mr. Ralph with whom the project originated and under whose careful management and supervision the project was carried out.

The first blocks taken from the very first kiln were of excellent quality and were sold. Since that date all blocks have been taken direct from kilns to cars and shipped. The "Bulah Block" is as well thought of at home as abroad. While they have been extensively used in New York, Pennsylvania and Ohio they have also been used right at home and four miles of brick road were completed recently in Ashtabula county built of "Bulah Block."

The "Bulah Block" is one of the best paving bricks made and is finding a ready sale among exacting street and road builders. Many of the blocks have been used in New York highways, and the entire output of the plant has been taken a long time ahead of its production.

The entire success of the plant is due to Mr. Ralph who "would not be put down and out." He was sure he had the material and then he made sure that he installed the right machinery. Rightness of material and machinery is a combination hard to beat, and when backed by rightness of management, are sure to make good and that, in brief, the whole story of success with the Ashtabula Shale Brick Company.—"American Clay Magazine."

Shaking Grates for Steam Boilers

Apparently the Martin Grate Company, Chicago, Ill., has been successful with its Martin anti-friction rocking grate among brick and clay working plants, as evidenced by the number of letters of appreciation from the users of this equipment it has received from various parts of the country. They lay especial emphasis on the fact that clay workers have not given the attention to improving their power plants as have manufacturers in other lines, notwithstanding the fact that fuel is one of the important cost items in the making of clay wares. The claim is made that fully 90% of the boilers in clay working plants are still equipped with the old wasteful type of grate bars.

Clayworkers who have used Martin grates, claim that the cheapest coals, such as slack and screenings, burned on these grates will give fully as good steam results as the higher

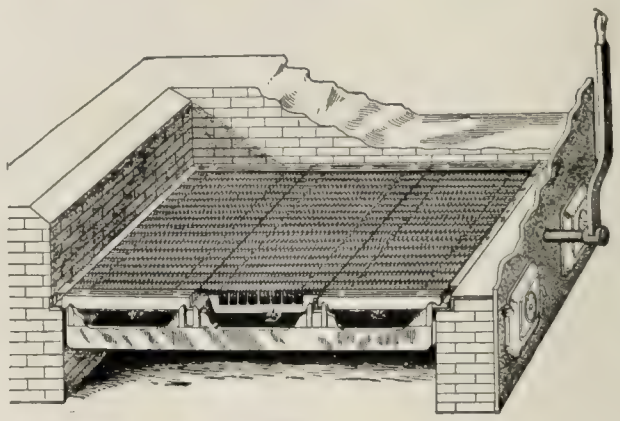


Fig. 1

priced coals on the plain grates, and thus affect a great saving in the fuel cost.

The following illustrations will give a general idea of the more desirable features contained in this particular grate.

Fig. 1 shows the grate as usually installed under horizontal return tubular boilers. It will be noted that the grate bars are in very short sections and that they run lengthwise with the boiler so that a cleaning tool may be run over them as easily as on the plain grates. The makers also call attention to the "fool proof" feature—that is, no part of the grate can be left sticking up into the fire to be burned out.

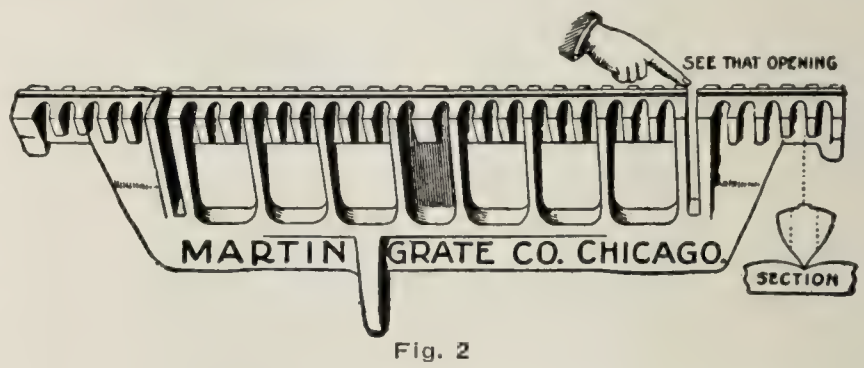


Fig. 2

Fig. 2 shows the detail of the grate bar. It will be noted that there is a slot near each end to allow for expansion and that the heavier part of the bar is five inches below the fire with a thorough cross ventilation, making it impossible to warp in ordinary service. As a matter of fact, the manufacturers claim that in their fourteen years of marketing large numbers of the Martin grates they have never had a



A View of the Ashtabula (Ohio) Shale Brick Company's Plant Which Was Built in Spite of Difficulties That Stamped Its Owner as a Man of Indomitable Energy and Courage

complaint of a warped grate bar. The frame work is all down below and out of reach of the fire, is extra heavy in construction, and it is claimed, should last indefinitely.

The makers send out these grates complete, made up to fit the furnace accurately, and they can easily be installed by the local operating engineer without any change in the brick work of the furnace or the boiler fronts.

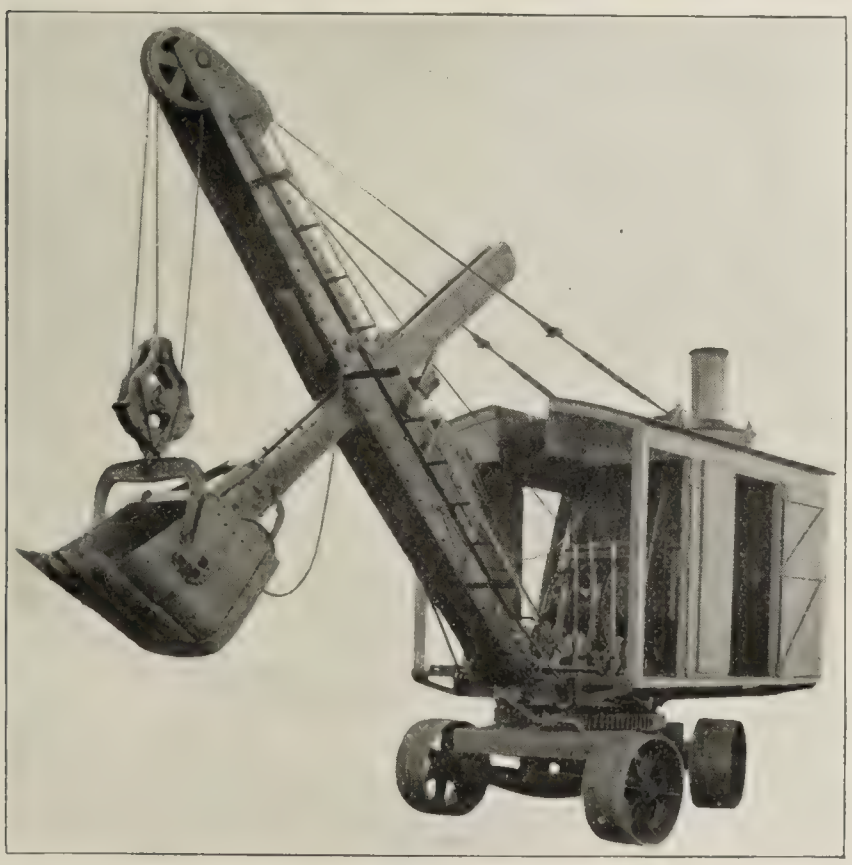
The Erie Steam Shovel

Not many years have passed since the steam shovel was a novelty on the brick yard. Then it was a luxury that could only be enjoyed by the larger plants whose increasing capacity made it imperative that some means be obtained whereby a larger amount of shale or clay could be gathered each day. For many years the pick and shovel was the mainstay of the pit gang, and even now in many parts of the country this method is still being used, where a steam shovel would do much more efficient work at a much lower cost per ton of material.

The advance of the industry, however, has made machine methods for clay gathering a necessity for the economical operation of a plant, and so the steam shovel is no longer an extravagant piece of machinery, but a real necessity in the equipment of every progressive plant.

Erie revolving shovels are the product of the Ball Engine Company, of Erie, Pa., and are backed by its forty years of successful manufacturing experience. They are built by an ably managed, trained organization, in a modern plant equipped with every facility for the most efficient and economical prosecution of the work. A new erecting shop containing over 30,000 square feet of floor space, has been built exclusively for the manufacture of Erie shovels, as a complement to the other complete facilities of this company.

The same high-grade, up-to-date manufacturing practice, which is responsible for the success of Ball engines, is employed in the building of Erie shovels. All parts are built to jigs, gauges and templates, and are absolutely interchangeable. This not only assures that repair parts fit perfectly, but it insures a very high grade of workmanship.



Erie shovels have conclusively proven their merit. They have demonstrated their ability to move a greater yardage, under given conditions, than any other revolving shovels of the same respective sizes and dipper capacities. They were subjected to a long period of gruelling tests, before they were placed on the market. The machines were abused in every conceivable manner and failed to develop any weakness in design or construction. They made good in every way.

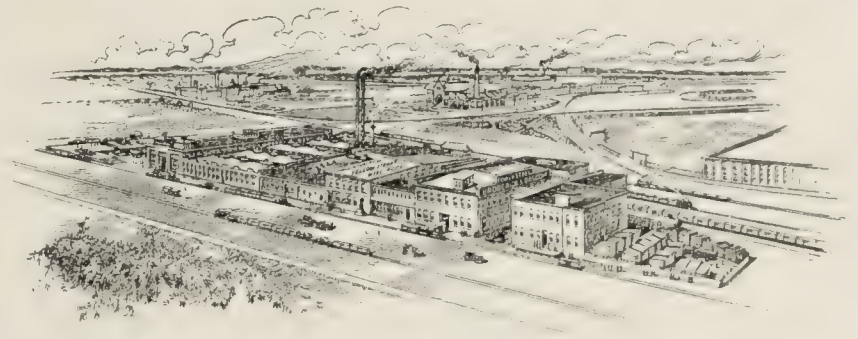
Erie shovels are further backed by a long established repu-



tation for quality and unquestionable financial resources. The Ball Engine Company's successful record and reputation is in itself a guarantee to the purchaser of that stability, permanency and dependability which is so essential in steam shovel equipment.

Rope Company Keeps Employes Busy

Notwithstanding the general business depression during the past fall and early winter, due to the European war, the



Broderick and Bascom Rope Company, St. Louis, New York and Seattle, manufacturers of world-famous yellow strand powersteel wire rope, carefully arranged matters so that every man and boy on their big pay rolls had work.

The company decided it was best to employ all its force, day and night shifts, even if only part time, rather than to work one-half of the force full time.

Last spring, the big St. Louis plant was running full force on at least eighty-five per cent of its full time. Later in the year, it operated three-fourths of the time, but kept the entire day and night force. Finally, during part of October and all of November, it ran one-half time—still keeping all the men employed.

During December, that the men might have some extra money for Christmas, the entire St. Louis plant was operated full time, day and night—even though that meant piling up large stocks of wire rope. This resulted in no little expense, for increasing one's stock several million pounds is no small matter. Now, with improving conditions, the matter of employment, time, etc., is working itself out naturally.

The Mayor of St. Louis and the President of the St. Louis Business Men's League, on December 23d, wrote to all St. Louis manufacturers, urging them to do just what the Broderick and Bascom Company had voluntarily done for months —that is, keep all their employes working, even if only part time. And that is certainly a good, helpful plan for all to adopt, under such conditions as have existed in recent months.

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.

THE LOGAN & KANAWHA COAL CO.

Miners and Shippers :: **Cincinnati, Ohio**

Logan Lump and Egg is especially adapted for Brick and Tile Burning.

Write or wire for prices before closing contract.

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff **Strongest and most durable**

Manufactured by

C. K. WILLIAMS & CO., EASTON, PA., U.S.A.

Correspondence solicited

H. M. DEAVITT, *Ceramic Chemist*

209 South LaSalle Street, Chicago

Best equipped consulting laboratory in the West for the analysis of clays and clay products.

Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.

Expert examination of deposits and plants a specialty.

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

Our business is diagnosing and remedying

TROUBLES

of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult

H. & B. COPPING, Kankakee, Illinois

We personally do the work.

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

IF YOU HAVE A WANT

Make it known in "Brick and Clay Record's" Classified Columns, and get results.

Questions

A Department in Which Workers in Clay May Ask for a Solution of Any Problem That Confronts Them in the Plant or Office

Addrss all communications intended for this department to "Editor, Questions and Answers," care of "Brick and Clay Record," Chicago.

Burning Lignite in Down Draft Kilns

633. *West Virginia—I have a brick plant proposition under way where it will be economical to use lignite coal. Will you give me what information you have regarding the practicability of using lignite coal in burning brick, especially in down-draft kilns?*

The above question was published in the Feb. 2, 1915, issue and an answer given at that time which was written by one of the best known exponents of the adaptability of low grade coal burning in the manufacture of clay ware.

A subscriber has written, protesting against some of the statements that were made and, as his remarks are evidently those of a man who knows, we print them, without alteration, addition or omission. He writes:

"The writer notes in the Feb. 2 issue the answer you have made to '633 West Virginia' on the subject of burning lignite coal. In this answer you suggest that, for an economical method, a plant should be erected similar to the one operating at Minot, No. Dak., where lignite is carbonized and briquetted.

"Perhaps this is none of the writer's business, but for the good of the clayworking fraternity, he feels called upon to suggest that the man who wrote the answer might well make a more extended investigation at Minot and that when he has done so, he will not be so apt to ask other people to invest their money in a similar proposition.

"The plant which the writer is running is burning raw lignite in the manufacture of brick and is getting good results in burning common brick in up-draft kilns. It is not, however, giving satisfactory results with pressed brick in down-draft kilns, although we expect to get better results by building larger stacks.

"We use fans, and when we built, were advised that, on account of using forced draft, we would not need to build high stacks. We think different now, for we cannot get rid of the moisture without trouble and loss of time.

"We are awaiting further developments in the carbonizing of lignite and the use of by-products before putting any more money into the 'game'. At the present time, the best proposition in this line is the kind of carbonizing plant built by Professor S. M. Darling of Estevan, Sask., who built an experimental plant at Estevan for the Saskatchewan government. He has just issued his report, a copy of which may be secured by writing to the government office at Regina, Sask.

"The writer has examined the plant at Minot and is prepared to say that the methods in use there are crude and expensive and not in any way satisfactory. This is largely due to the fact that the product is not and cannot be held uniform. This is as bad, comparatively, as it would be for one of the large flour mills to make an hourly change in its grade of wheat or in its mixture. The change is reflected in the finished product as well as in the cost of operation.

"At Minot every car of carbonized lignite is different.

& Answers

Recognized Authorities in Every Line of Clayworking, Engineering, Economics and Technology Will Write the Answers

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

This results in a constant endeavor to meet conditions by change of binder necessary and by other mechanical shifts and there is no doubt but that a large sum of money must have been lost there during the past year, in what seems to be a vain endeavor to make briquettes.

"The Darling plant at Estavan was in continuous operation and a uniform carbon resulted. This finished carbon has been used with great success in gas producer engines. Professor Darling has built no briquetting station but has shipped his product to other plants where good briquettes have been made and there seems no doubt but that he has the right idea.

"In conclusion I would ask that you give this letter as much publicity as possible, for the reason that I believe that whoever wrote the answer to the original question was ignorant of the exact state of affairs at Minot and has been careless enough to pass hearsay information to your readers. If they in turn acted upon his suggestions, without making a personal examination of the plant, property and product that he praised so highly, the result would be an enormous additional pecuniary loss."

Directions for Laying Brick Street Crossings

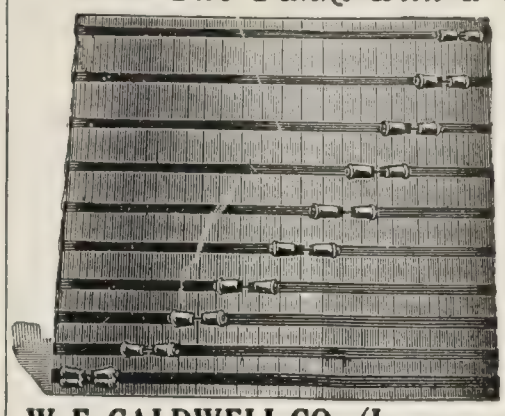
615. *Ohio—Can you give us illustrations and specifications for laying street crossings with paving brick? Our village has been using cement for this purpose, but as I am a member of the council, I persuaded them to put down paving brick crossings and so we bought a carload of paving brick. We wish to get the brick laid properly and thought perhaps you could give us the information and directions desired.*

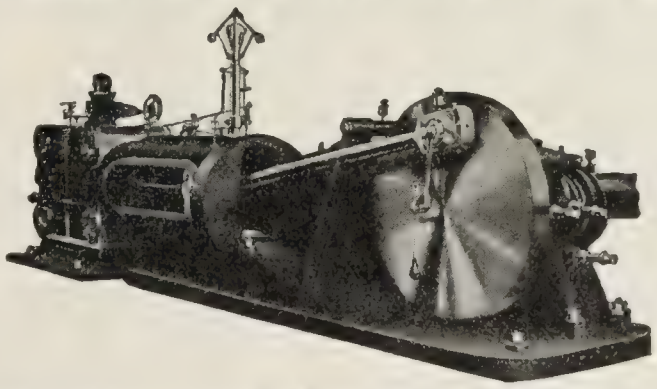
If it is necessary to put down these crossings over streets that are merely improved and graded with dirt and soil, it will be necessary for you to excavate to the depth of at least six inches below the brick, and fill and tamp in either cinders, gravel or broken stone. Shape this very carefully to correspond with the grade of the finished crosswalk, but at least an inch below the bottom of the brick.

Upon this prepared foundation of cinders, gravel or broken stone, place a uniform cushion of sand. Compress it evenly and thoroughly by rolling it with a lawn or garden roller, after the first application of sand. Then smooth the cushion up to grade, roll it and fill the depressions. Again smooth it, fill the depressions and smooth again. The purpose of repeating the rolling is to have the bed thoroughly and evenly compressed and to have it conform with the grade of the crossing.

Then put in the brick on edge, and after in, tamp carefully on either side broken stone or cinders for eighteen inches or two feet away from the edge of the crosswalk,

Increased Efficiency *Greater Economy*
Results obtained from use of
"Fuller Quality"
Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.
Write for Fuller Quality Products Catalog No. 50-A
Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

"The Tanks with a Reputation"

The construction of
Caldwell Cypress Tank
is based upon scientific and conservative engineering principles that eliminate every point of weakness found in ordinary tanks.
The proven durability of the tank material, the scientific hooping and the expert construction, all combine to make the Caldwell Tank wear, last and give satisfaction. Get our illustrated catalogue before buying.
W. E. CALDWELL CO., (Incorporated), LOUISVILLE, KY.
Tanks { Steel-Wood / Galvanized } Towers
Wind Mills - Pumps - Gas Engines

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS

Send for Catalogue No. 65-B
Murray Iron Works Co. Incorporated Feb. 1, 1870 **BURLINGTON, IOWA**

"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
BUCKEYE
Offices: Steubenville, Ohio
MEANS
BEST
BEST
Mills: Newark, Ohio
MEANS
BUCKEYE
All Sections from 12 lb. to 40 lb. per yard
Write or wire us, when in need.
No order too large to handle promptly or too small to secure immediate attention.



Pyrometer Precision

You insist upon precision in all your departments. Why take a chance on its lack by the installation of anything other than THE STUPAKOFF STANDARD LE CHATELIER PYROMETER.

Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa.

300 lbs. of slack coal per 1,000 brick

are usually required in

THE KLOSE KILN

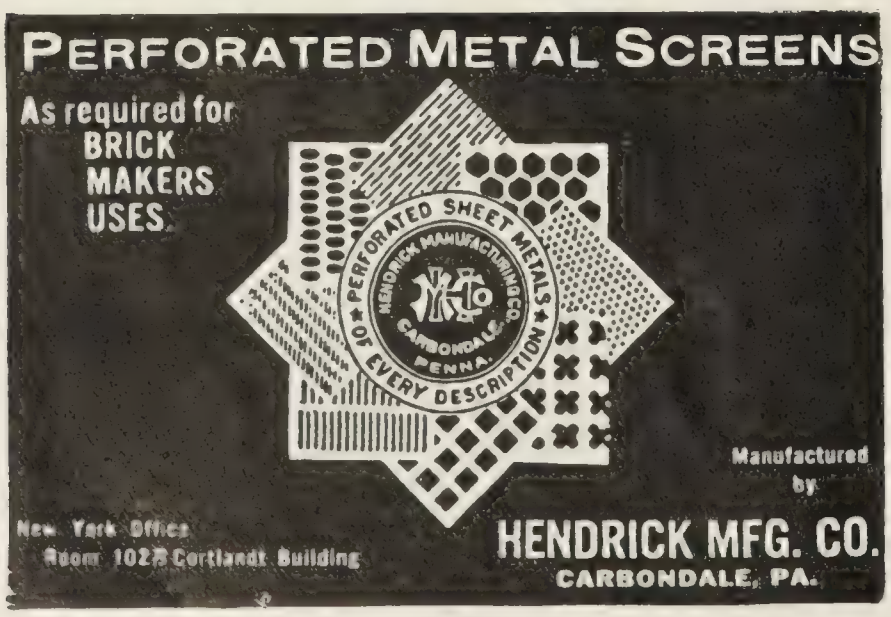
Cheap in construction and economical in operation. Adapted for small and large capacities.

Write for particulars and references

K. W. KLOSE, 4239 Benton Blvd., Kansas City, Mo.



Davenport Locomotive Works,
Davenport, Iowa



tamping and bringing this fill up level with the top of the brick. Then carefully brush sand into the brick joints.

In case the streets are improved with gravel, broken stone, cinders or any type of macadam, follow the foregoing instructions, except of course that it will be unnecessary to excavate to a greater depth than is necessary to secure a sufficient depth for the sand cushion and brick.

Crosswalks put in in this manner, will last almost indefinitely and give good satisfaction.

Best Height for Kiln Crown

647. *Pennsylvania—What is the lowest height of spring it would be practical to use for a crown of a thirty-five foot inside diameter sewer pipe kiln; the crown being built of twelve inch fire brick and banding no object.*

It appears that you wish to secure as flat an arch as possible and, at the same time, be sure that it is safe. The thrust of an arch on kiln walls and kiln bands is not the only point to be considered. If the arch is too high or too low, the tendency to buckle and to warp is great—this tendency usually manifesting itself on the quarters. The smaller the perpendicular distance between the spring of the arch and the apex of the crown, the stronger must be the kiln bands.

A height of 8 ft. 6 in., or approximately one-quarter of the inside diameter of the kiln, is generally accepted as the best practice, for it has been found that the kiln crown resists deformation strains when the rise is as noted. If you wish a lower crown in order to confine the heat, the best method is to lower the kiln side walls. This procedure will not materially decrease the capacity of the kiln. One thing must be borne in mind—that is to secure a sufficient curve in the crown to create a tendency to resume its original contour after expansion.

Clay Bar "Feathers"

646. *North Carolina—We are having trouble with our brick machine which causes the clay bar to "feather" or crack on one or more of the edges as it comes from the die. Our clay has a high percentage of shale and we use an oil die, the column coming out of the machine edgeways.*

The "feathering" may be caused by any of several reasons, of which insufficient tempering or its opposite extreme—too much tempering—may be one; insufficient lubrication may be another; the die may be too short or too long; the clay bar may be too soft. The most probable cause is lack of uniform lubrication in the corners of the die. This probably causes friction and consequent holding back of the corners of the column. This difference in the flow of the bar causes strains to be set up that invariably tear or "feather" the edges. Why not write to the manufacturers of the die that you use, telling them of your trouble and asking them to suggest a remedy?

Wants Book on Burning Dry-Press Brick

614. *North Carolina—Will you please inform me if there is a practical treatise published on the burning of dry-press brick?*

There is no literature on the subject of burning dry-press brick to our knowledge. The operation followed in burning this type of brick is very similar to the burning of stiff-mud brick, except that the watersmoking period is somewhat lengthened in the case of the former.

In burning other types of brick, the watersmoking period usually occupies from two to three days, depending

upon the nature of the clay, the kiln and other conditions, while the watersmoking period when burning dry-press brick usually extends over from five to seven days, the fuel being wood, only. This form of fuel is used in preference to coal because of the tendency toward the formation of a coke-like substance in the interstices in the bottom of the kiln when coal is used, in the long watersmoking period, shutting off the draft.

We would suggest that if you have any particular problem which you are trying to solve that you write us in full as to just what it is, in which case, we shall be only too glad to answer your question through this department.

Wants Information About Tile

643. *Mexico—We are forwarding to you, under separate cover, a small sample of burned clay floor tile. We have a clay similar to this, which we believe would make up into nice tile. We would like to know from you, if possible, what kind of a glaze has been used on this tile.*

We received the small sample of burned floor tile which you sent us and, in our opinion, it is not a glazed tile. The glossy texture which it shows is obtained, in the first place, by grinding the clay very fine, by pugging it thoroughly and then by running it through a slick, smooth die, possibly one with a very long nose. The pressure behind the clay is very strong, the clay running through the die in a very compact form.

The differential color is probably obtained by exposing the tile to firing gases and, possibly, to a slight reduction process at the finish. We would imagine that these tile are subjected to a very quick rise in temperature at the last of the burn—just enough to start a slight surface fusing.

Wants Reading Notices on Brick

640. *Kentucky—We have made arrangements with a local paper to run a series of talks under the head of "News Items" about brick being the proper building material. Have you anything that might help us out in this undertaking?*

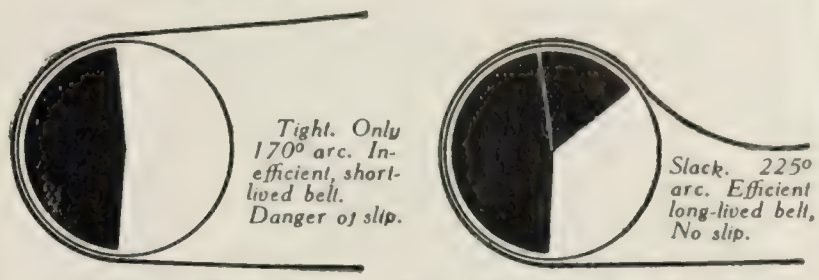
We do not know of any better line of "reading notices" on brick than those which were published as a part of the Stoddard series of articles on "Publicity or Free Advertising" which ran in this magazine from Aug. 4th to Nov. 17th, 1914, inclusive. We presume that you have a file of the magazine and can take these stories from it but if you lack those copies, we will be glad to go back through our files and try to find enough of the series, at least, to help you. Outside of that, we strongly suggest your going back through the current issues of the magazine for, perhaps, six months and you ought to find enough short items boosting brick to use in your papers. Some of them, perhaps, will have to be rewritten, as they have to do with something which preceded them, but this should be easy and we offer this suggestion to you as being the most logical way of getting what you want.

Wants to Buy Red Burning Clay—Not Shale

648. *Indiana—We are looking for a good red burning clay—not shale. This material is to be used in the manufacture of fine clay products, such as vitrified wall and floor tiles. Perhaps some of your readers know of a deposit that would contain the kind of material we need.*

The above inquiry is submitted to our readers with the suggestion that the location of the plant sending the inquiry be taken into consideration. It would, we presume, be impractical to ship clay any great distance.

Without **With**

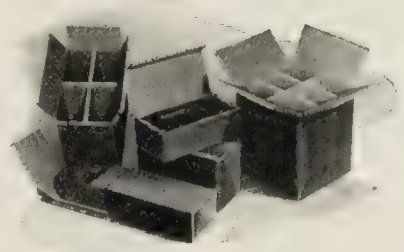


CLING - SURFACE

We will send test data by leading American engineers, but a trial in your own plant and at our risk would dispel all doubt. Used the world over. Ask for literature.

Cling-Surface Co 1029 Niagara St Buffalo N Y

ARE YOU INTERESTED



in something that will help you in your sales effort? You know how important it is that your sample brick make a good impression on your prospective customer. Use the Hinde & Dauch corrugated container and thus insure yourself against broken corners and chipped edges.

Made to accommodate 1 to 6 brick

Convenient and Economical.

The Hinde & Dauch Paper Co., Sandusky, Ohio



THE IMPORTANCE OF DRAFT CONTROL IN BURNING

Cannot be overestimated. For many years we have made the

Best Draft Gages for Kilns.

The Ceramic Supply & Construction Co.

COLUMBUS - - OHIO

Gardner Read & E. Winfield Day

INSURANCE

1229 Insurance Exchange Chicago

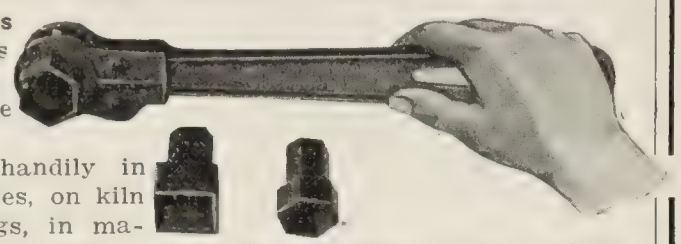
Specialists in the reduction of insurance rates and fire hazards.

To those who place their insurance through us our service is free. Others we charge a percentage of the Net Savings which we secure, plus the actual expenses.

Do you know why you are being charged a certain rate and what is necessary to secure a reduction? We Do!

We personally argue discretionary charges before the various rating authorities having jurisdiction in your district.

FROGS SWITCHES
We manufacture
TRACK EQUIPMENT
of Every Description
and are prepared to make shipments on very short notice.
Ask for Catalog C
THE CINCINNATI FROG & SWITCH COMPANY
CINCINNATI, OHIO 1

The Wright Ratchet Wrench
Only one application of wrench to tighten nut, and one application with socket reversed to loosen.
Eliminates bruised nuts and fingers
Saves time and labor.
It works handily in unhandy places, on kiln and tank lugs, in machine and boiler room.

¼ to ¾ in. Square or Hex. sockets.
Chicago Manufacturing & Distributing Co.
2608 West 26th St.,
Chicago, - - - - - - - - - Illinois

J. M. CUTSHALL C. F. CUTSHALL
General Contractors
We install waste heat dryers, build clay plants complete; also construct any type of kiln.
Brazil, Indiana

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.



MARCH WILL OPEN UP the building season of 1915, generally speaking. On the whole it finds the country expectant of good times. Optimism prevails where hopelessness ruled six months ago. It is beginning to be clearly understood that good things can come out of the present turmoil abroad, and, furthermore, that they are actually under way.

Traveling about the country one will see here and there factories brightly illuminated at night. The big medical supply mills are working overtime. In Pennsylvania the steel mills are becoming busier every day. In New England shoe, leather, rubber, ammunition and munition mills are working day and night. Big machine shops are making nights hideous in some centers hammering out not only implements of embattlement, but lathes, planers, augers, plowshares, engines, steel rails and a thousand different things that take a place in peaceful occupations. Other industries like wool, cereals, oil and wire are increasingly active.

Burned clay products are also in better demand. Art tile and vitrified products, including table ware, pottery and similar lines made from clay, already feel the curtailment of foreign supplies by heavier specifications from American and from some foreign architects and owners.

As for signs of improvement in business with direct reference to the increasing activity in lines already mentioned, a student of commercial economics and foreign finance gives to "Brick and Clay Record" a side light on the situation that perhaps few persons have fully realized.

Never before in history has there been such a foreign exchange situation as we have had recently. But never before have we been in such a trade position as we are now in and shall continue to be while the war lasts, with neutrals buying abnormally and belligerents buying desperately in our markets and with no foreign countries able to give us their goods in the volume they have been sending them to us before the war.

Our market in foreign exchange is not nearly so much to wonder at as our foreign trade records, despite the blockades that Germany and England are trying to maintain abroad. The insurance companies have done wonders in keeping rates as low as they have under the circumstances, but the demand for insurance has been so great that they have hardly dared to do otherwise.

No one in America needs English exchange to pay out in London, German exchange to pay out in Berlin, or French exchange to pay out in Paris. The boot is on the other foot. There is no need of foreign exchange to pay bills in foreign countries, because there are no bills to pay.

The need of the world is American exchange with which to pay bills owed by foreigners in our markets.

Look at the fabulous record of the first half of February. At thirteen test customs ports we exported in two weeks very nearly $114,000,000. We imported at these ports only a trifle more than $46,000,000. Those thirteen ports alone gave us a balance for that fortnight of very nearly $67,500,000.

The balances at these test ports indicate a foreign trade balance in that fortnight for the whole country of some $80,000,000. And in that first fortnight of February, with two Sundays and Lincoln's birthday, there were only eleven business days. There was, therefore, an average trade balance in our favor of about $7,250,000 for every business day in the two weeks in question. In the latter part of the month, with two Sundays and Washington's birthday, there were the same number of days on which no business was done in the government departments. This shortest month in the year, then, has only twenty-two business days, but a daily average for the latter part of the month, about the same as for the early part of the month, would give a trade balance of some $160,000,000.

There is no occasion to marvel at the collapse of foreign exchange when the rest of the world is owing us on trade, as it has been owing to us for the last three months, at a rate which foreshadows a minimum of $1,500,000,000 a year and a possible maximum of more than $2,000,000,000 a year.

The world cannot pay offhand any such bills as that to the United States. Great Britain might pay her share with American securities owned by her subjects, if they would give them up to be shipped over here by the bale. British subjects, however, are not going to part with American securities—the only reasonable safe securities on earth today—if there is any other possible manner for London to liquidate in this market.

The rest of the world cannot pay their bills here in our securities because now they do not possess enough of our securities; not even France.

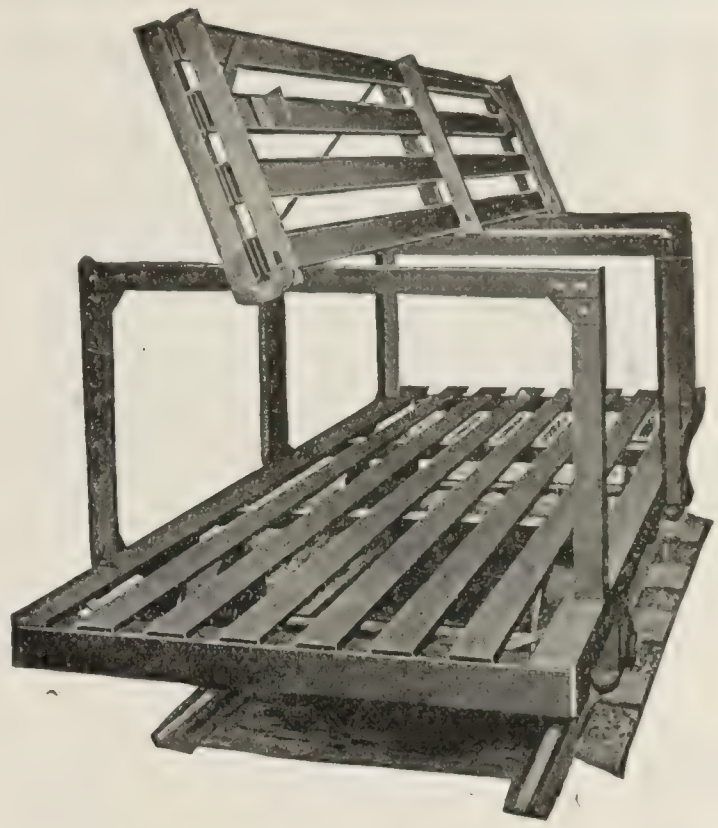
But there is a way not to pay, but to defer payment. Loans in this country to British banks and British individuals—if loans to the British government are not a violation of the spirit of neutrality—will take the tremendous pressure off of English exchange for the time being without the importation of gold, merchandise or securities to cancel current balances. Nothing else will.

It is the same with France, Germany, Russia or any of the belligerents. There is no doubt that we are going to convert current balances into short-term notes. And there is no doubt that after the time comes around for the payment of those short-term obligations we are going to convert them into long term bonds. After the war, if not before, we shall have bonds of the British, French, Russian, German and other governments.

We shall be holding their national securities just as for generations, when we were going through the process of industrial creation, following our own Civil War, our borrowed capital was represented in American securities taken by the investors of Europe.

There is no doubt that we shall become, and shall have to remain, one of the creditor nations of the world, because, after the fearful reckoning of Europe's war has been cast, the world will not be able to pay off its debt for many years.

The effect upon the American clay products industry of this outcome of the present tremendous export business in lines rather remote from the field covered by "Brick and Clay Record" is more or less indirect, save in a few lines



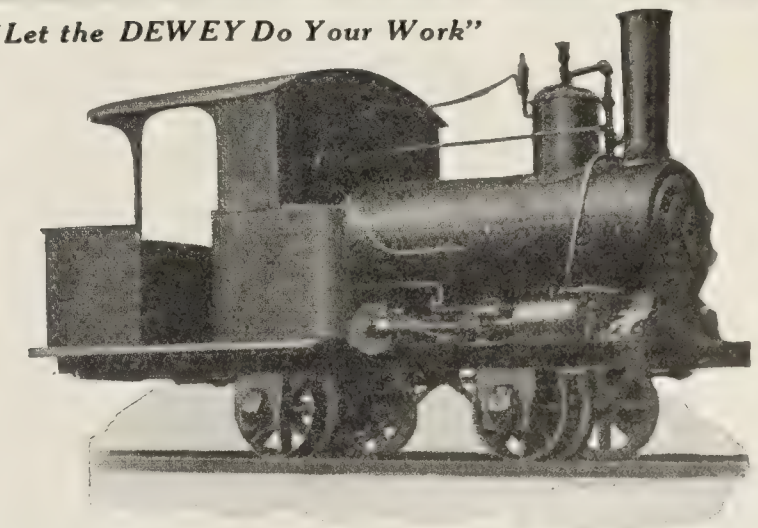
Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.

"Let the DEWEY Do Your Work"



The Boiler of the DEWEY

The Borden Brick & Tile Co., Goldsboro, N. C., is using a DEWEY locomotive. It discarded the mule-driven car and declares it not only got an increased efficiency but reduced the cost of hauling.

This concern hauls eighteen cubic yards of clay to a load on a trip of one and a half miles.

How many mules would it take to do this same thing and how long would it take them to do it?

It is our own special design. It has unusually large capacity, is a quick steamer, and is economical in fuel consumption.

These three characteristics have made the DEWEY especially adapted to clay pit work.

Strong, Safe, Long-Lived

The DEWEY boiler is designed to reduce to a minimum the numerous angles and corners and pockets which serve as collecting places for mud and scale—distressing features about every standard locomotive boiler.

The DEWEY boiler, therefore, is stronger, safer and longer-lived and does BETTER work than the regular types.

The DEWEY sells for several hundred dollars less than any of the standard type locomotives of the same size and weight..... **$1200**

DEWEY BROS.
Goldsboro, N. C.

FITS YOUR LADLES

NUGGET
COPPER
HARDENED
ANTI-FRICTION
BABBITT
THE CLEVELAND ALLOYS CO

Scientifically Alloyed

Especially for

Brick and Clay Working Machinery

Long live the bearings where "Nugget" is used. Price 15c per pound.

The Cleveland Alloys Co.

BEARING-METAL EXPERTS

Cleveland - Ohio

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA. — CHICAGO, ILL.

10% Of All Cement Used in United States

is

LEHIGH
PORTLAND
CEMENT

like art tile, face-brick, pottery and possibly architectural terra cotta. But if there is a big trade balance in our favor, and it constantly increases, as it certainly will, blockade or no blockade, the general prosperity that will accrue to this country, while the war lasts and after it is over, will redound to the benefit of building material in general, and to burned clay products in particular.

Un-Conventional Convention Gossip

That was some party at the "Tuller" the last night of the convention.

Gail R. Truman (Red) was looking for "Tubby" Hall. Boy! page Tubby.

C. G. Stevenson and "Tommy" Hibbens of the Stevenson Co. were there with four feet.

Work like Helen B. Happy was there for Bernard Bigsby of the Cleveland Alloys Co.

Did you all see the package Ed. Garlick of Cincinnati was carrying around? Some bundle.

R. O. Perrott had another cigar at identically the same angle, in the same corner of his grin that he had last year.

Did you see Pyrometer Lazear in his fancy dances? Some lively boy is that Chicago lad.

Frank Mahurin of the Arnold-Creager Co. without a cob pipe, didn't seem like Frank at all. Some Irishman.

Billy Drayton had blue prints of his new kiln. It is a dandy.

Elmer E. Miller of the Canton Grate Co. says the new idea in shaking grates for kilns is going great.

J. C. Schaffer is a tireless enthusiast,—the clay man's definition of a "booster."

It appears that the "kilties" have gone to Europe, but the Canadian clayworkers were surely in evidence.

R. L. Frink of the Frink Pyrometer Co. was neutral, being active in both conventions.

H. B. Henderson, always "with Edward Orton Jr." tall, dignified and sandy-haired, surely knows the game.

The Misses Clippert were as popular with the dancing men as a melon patch with a bunch of pickaninnies. Detroit certainly has many attractions.

Eddie Grand of Cincinnati was there in all his pomp and glory, but his side kick, Walter Purcell, was conspicuous by his absence. We all, including the ladies, missed Walter.

Charles A. Mattison, of the Dodge Manufacturing Company of Mishawaka, Ind., was there. Mattison has a good head piece—one not easily turned by success.

M. E. Gregory of Corning, N. Y., went home with a tired wrist. Two hundred old friends and as many new ones to shake hands with is some job.

G. H. Brown, of the Bureau of Standards, Pittsburgh, Pa., says he would rather meet an ugly dog than a man with a grouch, because one can shoot the dog.

Some one remarked that the smokerette was quite some kissing-bee—but not over where we were. Does anybody know who was kissed?

Joseph J. Hinde, of the Hinde Brick and Tile Company, of

Sandusky, Ohio, is "following his father's footsteps"—a well defined path to success.

Kleymeyers—two of them in concert—say "Swat the fly that springs that filbert about our name being the wrong way to spell clay."

Barney Radcliffe and R. T. Stull, the men from the University of Illinois, are everlasting tunneling under the whys of all things clay.

Mrs. C. P. Mayer, the better half of the new N. B. M. A. president says "Brick's three cornered badge is a beauty." Thank you.

D. A. Moulton of Ironton, Ohio, never seemed to sleep, and we never failed to see his blue eyes twinkle. How is it done?

Oliver Renkert and "Bob" Keplinger the "make-it-go" combination of the Metropolitan Paving Brick Co. didn't have a lonesome time.

G. O. French of Canton, Ohio, finding that the "Big Four" block plant wasn't enough, and requiring more, he built The Lincoln Paving block plant at Corning, Ohio.

A. V. Bleininger—we want to know just what part of the "smokerette" you enjoyed most. Boy—page Professor Bleininger.

Professor Ross C. Purdy (yes, he is still "Professor" to most of us), was *there* as usual, and was the "Peck's bad boy" of the A. C. S. convention.

F. A. Hoiles, of the Alliance Brick Co., a licensed rug texture man, had a beautiful "brick rug" in his room at the Hotel Statler.

Walter Primley of the Midland Terra Cotta Co., of Chicago, saw and heard it all at the A. C. S. meetings. How many more can say that?

Ralph P. Stoddard of the Society Advocating Fire Elimination, of Cleveland, Ohio, is a live wire and a regular fire eater. Go to it, you are on the right track.

Otto Trautwein of the Trautwein Dryer and Engineering Co. of Chicago, advocated the armored kiln, the kind that they ought to use in Belgium.

Colby M. Avery of the Stephens-Adamson Co. of Aurora, Ill., believes in laying up clay for a rainy day.

Robert Walker, of the American Sewer Pipe Company, Jackson, Mich., talked about sheet steel signs, advertising vitrified, glazed drain tile.

H. R. Brewer, of H. Brewer and Company, of Tecumseh, Mich., said that this was his first convention. He is of the third generation of convention-going Brewers.

Miss Salmen, of Slidell, La., received a great deal of attention at the hands of the young men attending the convention, many of whom recalled the courtesies extended them last year, in New Orleans.

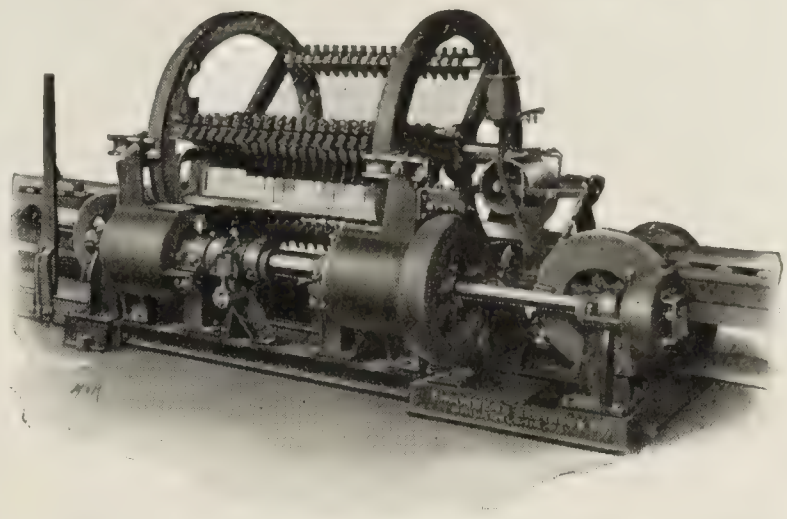
S. C. Martin, of the Kittanning Brick and Fire Clay Company, bought Carolina Perfectos for a group of brick men, despite the warning given the milk-man in an old play—"Don't give them the real article—it might poison them."

Harry R. Beegle, of the Beaver Clay Manufacturing Company, of New Galilee, Pa., has a hard time escaping from the dealers who were anxious to "get his line" for their towns. The "Turkestan" line is a sure rent payer.

A. B. Meyer, of Indianapolis, Ind., wore his usual sunny smile and brought his unusually pretty daughter. Miss Meyer seems to take about as good care of her father as he takes of her, which is saying a good deal.

Charles Bonner, president of the Bonner & Marshall Brick Company, Chicago, acted as chaperon for his general mana-

New Multiple Brick Cutter



THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

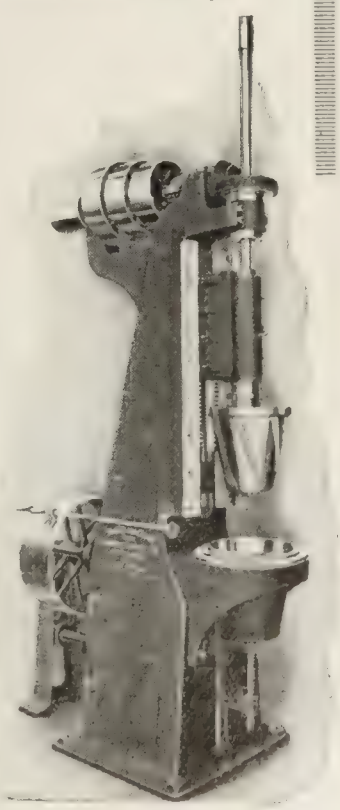
Chambers Bros. Co.,
Philadelphia, Pa.

Baird

Pot Molding Machinery

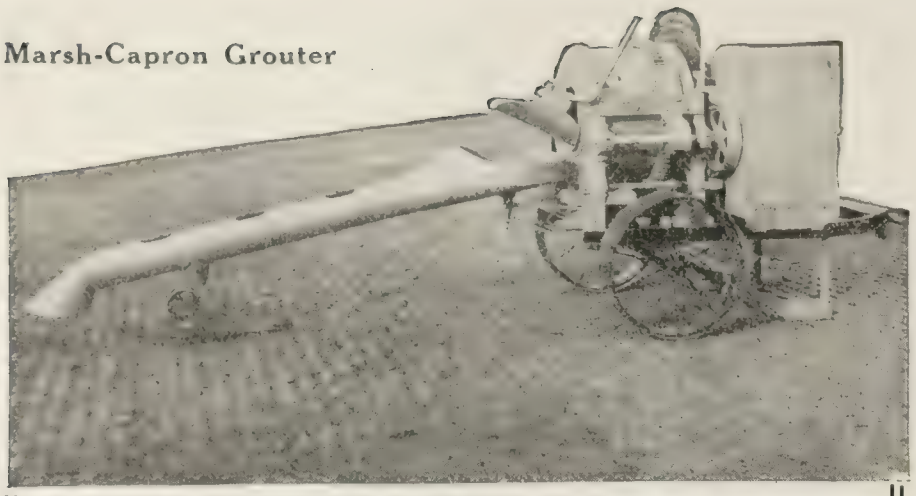
We specialize in Machines for the Manufacture of Pottery and Guarantee Every One We Sell.

Write us for information.



Baird Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.

Marsh-Capron Grouter



Successful Brick Paving

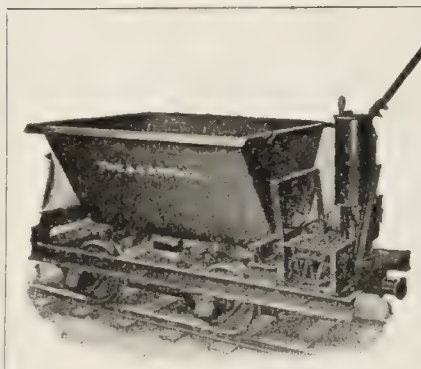
depends, in great measure, on correct concrete grouting. Most economical, easiest and most permanent grouting is done with the

MARSH-CAPRON GROUTER

This machine bears the unqualified endorsement of leading paving contractors and paving brick manufacturers the country over. It simplifies the work of grouting and adds profit to every contractor who operates it.

Further particulars may be had by addressing us on a postal card.

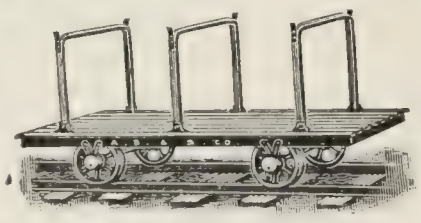
MARSH-CAPRON MFG. COMPANY
461 Old Colony Bldg. CHICAGO



REDUCE YOUR HANDLING COSTS

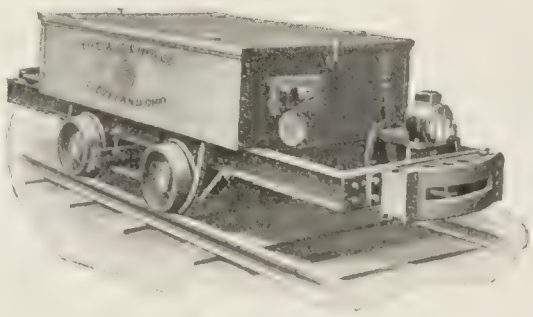
By the Purchase of Efficient Equipment

No. 217-E. Side Dump Car Equipped with Motor



No. 126 Double Deck Dryer Car

ATLAS
High Efficiency
Cars and
Electric Locomotives



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.
Dept. I
1287 Marquette Road, Cleveland, Ohio

ger, Harry C. Podolsky, and had some task keeping cases on him.

Room 920 at the "Statler" was the headquarters of the fifty-two page booklet boys. Fred Garst of the American Enameled Brick & Tile Co., was not happy unless the deuces were running wild.

"Bob" Queisser, of the Queisser-Bliss Company, of Cleveland, is some expert at sleight-of-hand tricks with the cards, but for an unadulterated and consistent loser, we kindly recommend him to the boys.

Archie Reid of Newark and Philadelphia was accompanied by his wife. He suggested that it is a good plan to take your wife to conventions; Archie kept out of mischief by so doing.

F. E. Schultz, of the Wooster Shale Brick Company, of Wooster, Ohio, says that the only way to "Get things coming your way," is to get out and behind them, and chase 'em the way you want them to go. Some hustling directions!

B. E. Place of E. M. Freese and Company, of Galion, Ohio, has some original ideas on truth-telling. He says that the truth is never worn out by use, but that it loses efficiency when stretched too far and too often.

Will Gibbs, of the Stupakoff Laboratories, Pittsburgh, was one of the popular young men at the convention. His "Don't Be an Ostrich" became quite a "buy-word" before the meeting ended.

Those Cleveland fellows just won't behave. Here that man Koblitz of American Brick got all burnt up the very first day on one of friend Statler's cigar lighters and it was a brand new suit, too.

We always like to get in the atmosphere of Macdonald's genial presence—he of Paving Brick Association fame. He surely radiates a wealth of good cheer along with his paving publicity. We don't see you often enough Mac.

W. A. Meddick of the Lakewood Engineering Co. had a broad smile, a tireless disposition and a kick,—"Every fourth man I meet is another machinery man and I can't talk 'cars' to them."

Jacob Rahn is superintendent of two plants in Alliance, Ohio, and still finds time to come to conventions with J. B. Wilcox, the man who makes the "Speedway" block.

Fred Kanengeiser of the Bessmer Limestone Co. was there and states that he is going to be an editor. If he "edits" as well as he "bricks" there is a place for him on "Brick and Clay Record's" staff.

A. F. Greaves-Walker, assistant general manager of the Sun Brick Co., Ltd., of Toronto, Canada, was there and did what most of us didn't do. He brought his better half along.

Alfred Yates of Shawmut, Pa., dictated a letter to "B. & C. R's" stenographer, accepting an order for "Shaw-muts." We guess it was that,—we couldn't see over Mr. Yates broad shoulders very easily.

Harold Copping, of Kankakee, Ill., was there with his usual broad smile. No wonder, at that, since he was meeting up with so many men that he had helped, in days gone by. The Copping boys are trouble beaters.

F. B. Jenks of the Hook Patent Kiln Company, of Vigo, Ohio, was a charter member in the "Fourteenth Floor Club" and caught many of the visitors who came to "Brick and Clay Record's" headquarters.

E. C. Howard, of the Clay Craft Brick Company, of Columbus, Ohio, was there, with a glad hand and a cheer-

ful smile. Howard is certainly a consistent brick "booster," and is coming to be a familiar convention figure.

Dr. Thwing had a miniature kiln equipment in his room, with a recording pyrometer that "works while you sleep." He was another member of the "Fourteenth Floor Club" and found the upper stratum much to his liking.

C. E. Foster, president of the Eastern Paving Brick Manufacturers' Association, dropped in at "Brick and Clay Record's" headquarters, to pay his subscription, and do a bit of gossiping with the editor, who is by way of being an old friend.

Professor Ed. Orton, Jr., had lots to tell about his experiences in the war zone. For a time, it looked as though he would be held, by one side or the other—for either could have made good use of the rich fund of wisdom possessed by the well beloved secretary of the A. C. S.

"Buy Farr The Best" was a well known phrase before "Bob" Mitchell of Cleveland got away. By the way, when you get to Cleveland be sure to see Mitchell's brick wall—it's great conception well carried out and it's helped to make Cleveland "Build with Brick."

W. N. Durbin, of the Anderson Foundry and Machine Works of Anderson, Indiana, says "It's now past history, but it'll make some rare reading." Durbin's pet hobby is history—ancient, modern and future—and he takes it to bed and to meals with him.

C. A. Gardner, commonly called "Rex," general manager of the American Enameled Brick & Tile Company, was very much in evidence among the ladies. If they wanted to find him, all they had to do, was to look around the mezzanine floor, and "Rex" was there.

"Dan" Reagan of "Greendale" fame, had two cartons of brick along, with badges on. Looking over the Roster, we found they were C. C. Walters and Billy Drayton. Walters took home with him a beautiful tape line presented by Mr. What's-his-name.

Colby M. Avery, of the Stephens-Adamson Company, of Aurora, Ill., found that the Hotel Statler had a poor system of handling its coal and ashes, and sold the management a conveyor system in a few odd moments snatched from the time he spent with the brickmakers.

Mrs. A. F. Greaves-Walker said she was a consistent reader of "Brick and Clay Record" and that she considered it her duty to read it before her husband came home, so that she could tell him all the brick gossip before he had a chance to tell it to her.

Charles C. Stratton, of the Alumina Shale Brick Company, expressed some surprise at Architect Spencer's statement that Roman shaped face-brick were losing in popularity. He said that 1914 brought him a very satisfactory volume of Roman orders—and "satisfactory," to Stratton, means a big heap.

Robert J. Montgomery, Cr. E., of the clay research laboratory of the Pittsburgh Plate Glass Company, accompanied his brother, Earl T. Montogomery, E. M. (in Cer.) of Alfred, N. Y. The family resemblance is strong and the family acquaintance extensive.

G. H. Totten, of the Detroit Brick Sales Company met many old friends, and made some new ones, at the convention. Totten says he is the man who sold that nice order of face-brick in the interior of the Michigan Central Station at Detroit.

C. W. Irwin, of the Hydraulic-Press Brick Company's Toledo, Ohio, office, announced the fact that they had taken on more exhibit space, and were getting more than

Efficiency in Handling Your Material

Cut out the old hand methods—send to the scrap pile the inefficient equipment—Handle your materials from pit to dryer with modern equipment.

The "Lakewood" Line

Speeds Up Your Work



Every device—every machine has been designed to cut corners and take the straight, quick route to Economy and Efficiency in handling both the raw and finished product. The "Lakewood" Line consists of Buckets, Portable Tracks, Switches, Turntables, Clay Cars, Dryer Cars and everything needed to handle materials about a clay plant.

Send for the "Lakewood" Book No. 11 This book is more than a catalogue—it is a book of information on handling materials. A copy is yours for the asking.



The Lakewood Engineering Co.
(Formerly the Ohio Ceramic Engineering Co.)
Cleveland, Ohio

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

Dryer Cars

Made of cast iron, with steel axles and braces, to prevent warping in the dry kilns. The wheels are pressed onto the axles which are on roller bearings. A strong car and easily moved—in fact, just the car you need.

Pettigrew Dryer Cars have been used by Chicago's leading brick yards for years. We build them to give satisfaction to users.

We also maintain a large engineering department and pattern shop and are therefore in position to quote you on special cars or castings you need.

Pettigrew Foundry Co.

Dryer and Transfer Cars, Car Wheels, Turntables, Grate Bars and Kiln Grates.

Harvey, Ill.

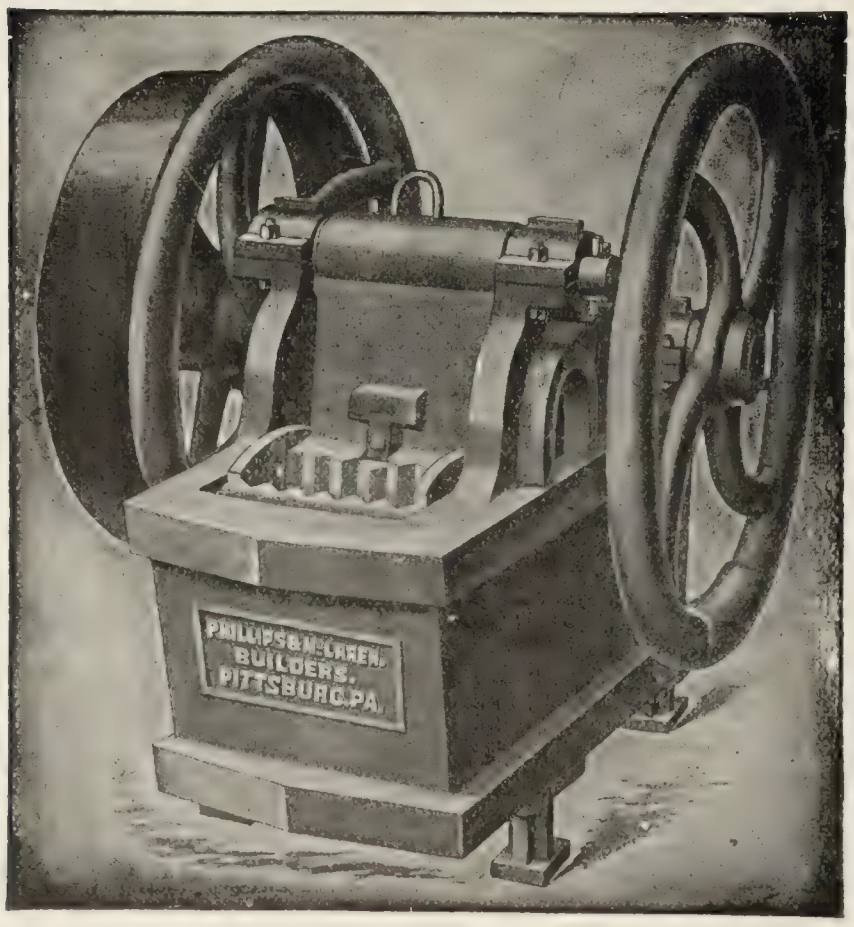
PHILLIPS & McLAREN CO.
PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.



a fair share of Toledo's face-brick and common-brick orders.

The Mamer boys were there from Benton Harbor, Mich., and are looking for a line of low-priced face-brick. They intend to do some advertising this spring in the shape of booklets showing plans and costs on moderate-priced brick houses.

L. E. Rodgers, of "Unitrol" fame, raided the Hotel Tuller's supply of calendar pencils, and brought the results of his raiding over to the Hotel Statler, where he gave them out with a lavish hand. He overlooked one or two of his friends—hence this brief mention of the incident.

John H. Donohue, Jr., of the Belt Line Brick Company, of St. Paul, Minn., wore a fur-lined overcoat that was the envy of many of the delegates. Some claimed it was a family affair, confusing John with the editor of a certain magazine, for which the latter is grateful.

A. B. Luten, paving brick distributor of Toledo, Ohio, and other progressive American municipalities, was "lost" without the fair partner of his joys and sorrows. He wasn't the only one that missed Mrs. Luten at the convention.

L. N. Delamater, of Jackson, Mich., found much to interest him in Detroit, and from last accounts had not checked out, up to Saturday night. This is said to be a record for Delamater, who flits from place to place, like a hungry humming bird in a rose garden.

Frank J. Nixon, of Paine & Nixon, Duluth, Minn., looked prosperous and smiled happily. If the convention ever goes to Duluth, Frank will be sure to get a third vice-presidency—especially if the ladies have the association suffrage by that time. Brother Nixon runs "Ben" Fisher a close race, when it comes to popularity.

W. O. Fredenburg, of Fredenburg & Lounsbury, of New York City, reported business conditions as quiet, but with a promise of a better loan market. He said that speculative building was confined largely to choice pieces of property, where the loan men could bank on the sure success of the building venture.

William Drayton, of the Hocking Valley Products Company, spent a few hours in "Brick and Clay Record's" headquarters, where he met a number of brickmakers who were old friends. Mr. Drayton's achievements in plant planning and equipment, have made him a notable figure in the industry.

William C. Black, of Carter, Black and Ayres, of New York City, came in to remind the editor that brick selling conditions in the little old town, were very much as they were when both were competing on the same job. "Despite the handsome exhibit rooms," he said, "the boy with the sample under his arm, and out on the job, gets the orders."

C. B. Sharer and Frank L. Hopley proved good advance men for the moving picture show that was staged by the American Clay Machinery Company. Someone tried to buy the pop-corn and peanut privilege, but it seems that it was tied up tight, long before the convention.

Herschel H. Macdonald (full name, please), was in ten places at the same time, setting all laws of natural philosophy relative thereto, absolutely at defiance. No matter where you went—there "Mac" was—always with the winning smile, the warm hand clasp, the word of cheer and the "makin's" in the shape of strictly all-Havana smokers.

F. C. Solms, salesmanager of the Puritan Brick Company of Detroit, Mich., has taken on some flesh since the convention was held in Chicago. He is very enthusiastic over the new face-brick exhibit the Puritan Company has

installed and assures us that it is a real "salesroom," and that it is getting the business.

William P. Varney, of the Hydraulic-Press Brick Company's Chicago office, sprung a new one in the "Hy-Tex" cocktail. It appears that the recipe is a closely guarded secret, but anyone meeting up with a Hydraulic salesman or officer, may, it is said, ask for a "Hy-Tex" cocktail, and it will be forthcoming. This does not go in "dry" territory.

More than one of the delegates to the N. B. M. A. convention were given an insight into their futures, and capabilities in lines other than clayworking, by the character-reading "stunt" of "Dan" Reagan, of Columbus, who, beside being a good brickmaker himself, is by way of being a good judge of human nature and other things of an even more uncertain character.

Charles F. Herrman, of the U. S. Brick Company, of Tell City, Ind., was a prominent figure at the convention, his abiding place being one of the most popular rooms in the Hotel Statler. Mr. Herrman is an enthusiastic believer in the Underwood system of burning with producer gas, and gave invitations broadcast, to "come down to Tell City and see."

Arthur S. Watts can define any word used in ceramic conversation—Lovejoy, Purdy and Frink please write.

D. E. Humphrey, general superintendent of the Deckman-Duty Company of Cleveland, is an observing sort of man—and some word-coiner. After gazing at a certain peculiar sight, he said, "Some men are not equal in stupidity and foolishness—they have others 'skun a mile.'"

Charles Bonner of the Bonner and Marshall Brick Company, of Chicago, came down to Detroit, right from his farm, which is near Niles, Mich. He had some of the joy of life in his grip, and said that his stock would soon be replenished by William P. Varney, of the Hydraulic-Press Brick Company, who lost a case of "acheboezy" on the length of the European war.

The new president, C. P. Mayer, of Bridgeville, Pa., showed himself to be a good presiding officer. He certainly ran the steam-roller over C. A. Bloomfield, of Metuchen, N. J., when the latter tried to put the convention on record as favoring Atlantic City for a meeting place in 1916. While C. A. talked about giving the delegates a nice bath, President Mayer gave him an ice bath of parliamentary ruling.

One man called at Parlor "A," the N. B. M. A. headquarters, and asked for a "roaster"—meaning a list of the delegates registered. Someone referred him to William P. Varney, who had "roasted" the brickmakers, good and plenty, when he pointed to the way they had supported (?) various co-operative publicity movements, designed for their benefit by the more progressive members of the profession.

M. McC. Everhard, president of the Everhard Company, of Massillon, Ohio, maker of "Dubltex" brick, said he was contributing to so many associations for the promotion of brick interests, that he had very little left for his own local advertising, which is extensive, and which has a "punch." One of the "catch lines" is as full of meat as an oyster. It is "Don't Ask a Carpenter Contractor How Much a Brick House Costs—Ask a Mason Contractor—He Knows."

George M. Krick, of Krick, Tyndall & Co., Decatur, Ill., believes that the prospective builder likes to look at pictures. He arms himself with made-on-the-spot photographs of cement block houses that are shelling off, and asks the man who talks cement to him, if he wants his new house to "act up" that way, two or three years after it is finished?

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O., in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook.s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

Vigo, Ohio

C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***



SAVE DOLLARS IN THE PIT
BLAST WITH
DU PONT
LOW FREEZING
EXPLOSIVES

A FEW charges of explosives properly used in the clay pit brings down masses of clay in condition for quick, easy and cheap handling.

The leading brick makers are cutting down brick-making costs because the clay is now handled easier and faster since the blasting plan was adopted.

Why not try in your pit this dollar-saving method?

For information about explosives for clay blasting write to Dept. 419.

DU PONT POWDER CO.
Established 1802
WILMINGTON - - - DELAWARE

Do You Know—

1. That the investment of a comparatively few dollars in brickwork (that is—more brick) will save itself, in insurance premiums, in eight or ten years?

2. That the added security from fire—that is, fire started in your own plant, or that of your neighbor—is "thrown in," free of charge?

Read
"Saving Dollars by Using Brick"
(Sample Copy will be sent for a two-cent stamp)

Then consider whether these facts are a part of the information you would like to have placed in the hands of every architect, every construction engineer, every prospectiev builder of a residence, warehouse or factory in the community your plant serves.

If so, consider the cost of copies:

100 for $ 4.00	500 for $15.00
1000 for 20.00	2500 for 40.00

It is an eight-page folder—the price is very low for literature that should increase your sales.

Drop a card—today—to

Brick and Clay Record

445 Plymouth Court Chicago, U. S. A.

Harry Podalsky, sales manager for Bonner and Marshall, of Chicago, Ill., demonstrated his ability to dance, an exercise that keeps him in fine physical condition. Once in a while, he was seen without his side-partner, Gardner of the American Enamel Brick and Tile Company, but that was only during the brief moments that Gardner spent on the mezzanine floor. Harry is not so strong as Gardner is, on the "afternoon tea" thing.

Edmond F. Grand of the w.k. brick selling concern, the Pursell-Grand Company, of Cincinnati, Ohio, was very much in evidence during the convention, his principal labor being that of explaining, particularly to the ladies, that it was really a very fair sort of a meeting, even if Walter Pursell were not there.

Professor Charles F. Binns, of Alfred University, hobnobbed with Gregory of Corning and several other New York state brick men, with a view to forming an association of clayworkers in the Empire state. Although ably assisted by "Charlie" Harris, of the Hollow Building Tile Manufacturers' Association, he found that the twin conventions had too many counter attractions, so decided to make it a mail-order proposition.

Ben S. Fisher, of the Columbus Brick and Terra Cotta Company, wore his customary smile and a new suit of clothes. He managed, in a quiet way, to greet the ladies of the convention, and still have time to run around a bit with Frank Nixon, of Duluth, Minn. Elsewhere in this magazine, a picture is printed, showing "Ben" giving an imitation of a stork.

H. L. Matz, of the S. S. Kimbell Brick Company, of Chicago, Ill., bereft of his chaperons, Binyon and Hogan, left his hat and overcoat at the Hotel Statler when he started home. It is notable, however, that he had an extra equipment, having come well provided with wearing apparel, in anticipation of emergencies of this character. He was accompanied, for the most part, by "Ben" Fisher, of Columbus.

The new Hotel Statler took care of its first convention in a way that should encourage other associations to patronize Statler Hotels. Although the hotel had been opened but a week, and the machinery, steel and human, had not "worn down smooth," the service was as nearly perfect as could be asked. When it came to doing favors for the convention guests, the hotel management was "there" with bells.

Carl C. Walters, of the Hocking Valley Products Company, of Columbus, Ohio, said that brickmakers were showing a greater willingness, now, than in the past, to "come in out of the wet" in relation to becoming licensees under "Dan" Reagan's patents on vertical textured brick. The day of the great Edison fire at West Orange, N. J., Walters sent the "wizard" a telegram of condolence, and offered unlimited quantities of "rug" brick in case Thomas A. awoke to a realization of what is recognized as the only fire-resisting material.

Floyd E. Waite of the Society Advocating Fire Elimination, of Cleveland and America, is really a "man with a message." He, and his society, have a sound basis for their arguments, which are "stop fighting each other—stop fighting concrete—stop fighting any fire-resisting material" and "start fighing frame." What concrete and hollow tile have taken from common brick can be regained in residence construction, eighty per cent of which goes to frame. There's a world of wisdom in what Waite says.

Convention Souvenirs and the Givers

The Bonnot Company was on hand, early, with a leather pocket book and bill fold which the delegates found more useful during the first days of the convention than later—not that the bill fold wore out, but that the contents melted like the "snows of yesteryear."

The G. B. Mentz Company of Walkill, N. Y., repeated their distribution of "press-the-button" knives, which was so popular at a former convention. These knives are a product of the Walden, N. Y., works, one of the plants that helped to wipe Sheffield, England, off of the cutlery map.

In addition to distributing a very attractive and witty booklet, E. M. Freese & Company, of Galion, Ohio, gave all visitors to their headquarters a substantial, practical Lufkin steel tape. These tape-lines, although of standard length, were too short to measure the popularity of the D. M. of P. E.

H. Brewer and Company, of Tecumseh, Mich., gave a thick black lead-pencil, and used several of them in making figures on new brickplant equipment. The ones they used themselves were sharpened to a fine point, and the figures they made seemed to be sufficiently small to bring in a good volume of business.

The J. D. Fate Company's brass desk clock was voted the "prize" souvenir of the convention, being of attractive design and a satisfactory timekeeper. Like all Fate machinery, it does its work with a minimum of hand labor, and needs very little regulation.

The Cleveland Alloys Company had a supply of red carnations, and was so generous in its distribution of the fragrant blossoms, that nearly all of the delegates were walking advertisements for the "fits the ladle" metal.

The Marion Machine, Foundry and Supply Company of Marion, Indiana, had a big supply of pencils, with which they filled the pockets of visitors to its headquarters, saving just enough to do some expert figuring with those who were in the market for equipment. Reports have it that the pencils did good work, and that the "keystone line" will have a larger place in clayworking plants during the coming year, than ever before.

The "Clayworker" distributed match-safes of Teco-ware, bearing the name of that excellent journal on one side, and the "Build with Brick" slogan on the other. One now decorates the desk of the editor of "Brick and Clay Record" and affords ammunition for all of the smokers in the sanctum.

The C. W. Raymond Company of Dayton, Ohio, gave a memorandum book that was much in evidence during the sessions of the convention. While the delegates were making notes of the papers that were read, they were being given mental injections of the Raymond serum, which cures brickplant ills.

"Bob" Mitchell gave away a suit-case full of brass paper cutters, advertising the "Homestead" brick, and telling what everyone in Cleveland knows—that it is "Buy Farr the Best."

The Atlas Car and Manufacturing Company, of Cleveland, Ohio, found a number of customers for the metal pencil that they gave away, as well as for their cars and locomotives. The latter, while costing money to secure, are warranted to save their cost in a comparatively short time, so may be considered as "gifts" by those who are wise enough to purchase them early in the season.

DECLARE DIVIDENDS

at the end of this year—Install

The HOOK SYSTEM

right now—and

STOP WASTING FUEL

You can do it.

The Hook system of Burning Clay Products is not an experiment. It has proven its worth.

Think of this—one company burns drain tile in a 22-foot kiln in 26 hours. This time includes water smoking and high fire.

Another company burns in less than 30 hours, uses six (6) tons of coal, including the water smoking period.

A kiln of brick was burned in 77 hours. It formerly required 168 hours.

We can reduce your costs.

We guarantee satisfaction.

We install in your present kiln —round—rectangular—old—or new.

ASK US—HOW?

Hook Patent Kiln Co.

Main Office Vigo, Ohio

Canadian Office

250 Defferin St. Toronto, Ont.

THE

Frink Method

Of Burning Clay

IT IS

a combination of **your** knowledge, **our** experience, and a **reliable** pyrometer.

IT

eliminates guess work.

IT

gives an absolute check and reliable data for conducting the burn.

PYROMETERS

made and installed by Frink, are in use on some of the largest and best plants in the country. They have paid 500 per cent on the investment in one year. They are just as necessary on the small plant.

Ask us for references.

The Frink Pyrometer Co.

LANCASTER, OHIO

Songs Old and New Sung at the Banquet

One of the attractive features of the N. B. M. A. banquet was the clever cut-out booklet, in the shape of a common building brick. The cover was printed in a tint closely approximating the shading of the Detroit common brick which are, for the main part, pressed in a sand-mold. In the depressed panel, the word "Lays" appeared, just as it would have been seen had a man or firm named Lays been the manufacturer of the brick.

Opening the cover, however, the fact came to view that it was a book of "brick lays" designed for the banquet and distributed with the compliments of the Detroit Reception Committee. As many of the "lays" are original, being composed for the occasion by H. Campbell and V. Tucker, and as they have a "brick" flavor, the first seven are reproduced.

"BUILD WITH BRICK"

(Tune—Lindy, Lindy—Sweet as, etc.)

Buildings, buildings, rise up on every side,
Tall ones, small ones, built far and near,
Wood is fast disappearing.
"Build with Brick" we are hearing,
Only brick construction will be used within a year.

IN THE GOOD OLD SUMMER TIME.

In the good old summer time,
In the good old summer time,
When building booms,
We'll stow our glooms,
For all will be sublime.
While snow is thick,
We're making brick,
And that's a very good sign,
From spring 'til fall
We'll sell 'em all,
In the good old summer time.

IT LOOKS LIKE A BIG NIGHT TONIGHT.

It looks to me like a big night tonight,
Big night tonight,
For every brick man is here
With a smile of good cheer,
So it looks like a big night tonight!

It looks to me like a big night tonight,
Big night tonight,
For when Randall's on deck,
There's a good time, by heck,
So it looks like a big night tonight!

SELLING, SELLING.

(Tune—Sailing, Sailing.)

Selling, selling, salesmen on the jump,
But advertising is the stuff that makes the buyers hump;
Selling, selling—makes 'em build with brick,
We're all agreed,
It's what we need,
To help us turn the trick.

ADVERTISE.

(Tune—Tipperary.)

It's the wrong way to go about it,
If we don't advertise.
Take the strong way—you've got to stand it
To attract the man who buys;

So let's all pull together,
Team work wins the prize.
Talk of something else besides the weather
And let's advertise.

I WANT TO BUILD ONE.

(Tune—Back, Back, Back to Michigan.)

I want to build one,
I want to build one,
I want to build with solid brick,
Walls twelve inches thick,
Get 'er started mighty quick
For I'm a booster,
Although I use 'ter
Build with wood and other stuff,
But now I know it isn't good enough,
Nevertheless
I want to build one,
I want to build one; I want to build one
That will sell,
That's why I wish again I lived in Michigan,
Where they build well.

I WANT A LITTLE BUNGALOW.

(Tune—I Want a Little Bungalow.)

I want a little bungalow,
Where the red brick always show,
Build it nice and snug and cozy,
Of those red, red brick so rosy,
And when a chicken happens by,
How can it help but catch her eye?
She will flop her wings and cackle:
"Here's where housework I must tackle,"
In a bungalow—where the red brick always show.

Hotel Statler Gives Match Holders

The Hotel Statler distributed attractive match holders, some of which will be preserved as individual souvenirs, since they bore the words "Presented to the first occupant of Room—." These match holders are designed to hold paper matches and are another blow at the "lumber trust."

Valuable Clayworking Information

During the past year the Ceramic Department of the University of Illinois has issued five bulletins dealing with subjects of more or less interest to clay workers. These bulletins are:

Bulletin No. 19. "Investigations on Iron Ore Cements" by A. E. Williams.

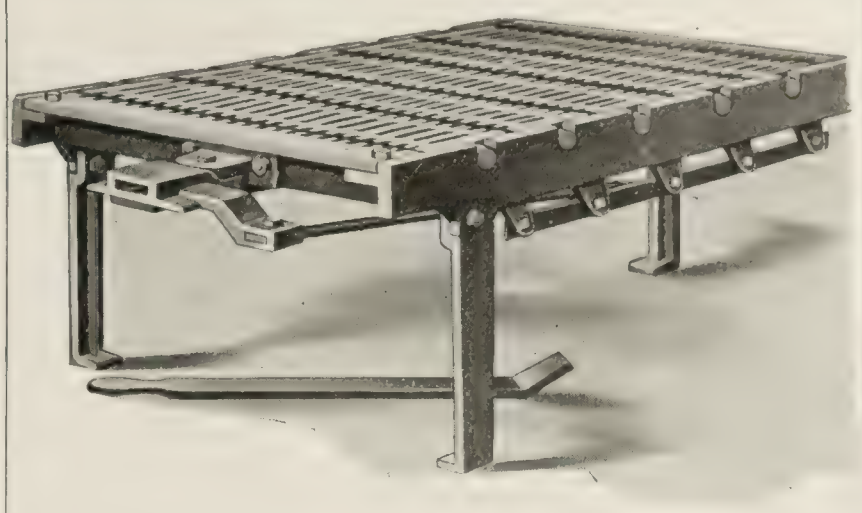
Bulletin No. 20. "Designs of Seven Test Kilns" by R. T. Stull and R. K. Hursh.

Bulletin No. 21. "Deformation Temperatures of Some Porcelain Glazes" by R. T. Stull and W. L. Howat. "A type of Crystalline glaze at Cone 3" by C. C. Rand and H. G. Schurecht.

Bulletin No. 22. "The Influence of Chlorides of Calcium and Iron When Precipitated in a Porcelain Body"—"Some Cobalt-Uranium Colors" by B. S. Radcliffe.

Bulletin No. 23. "Notes on the Development of the Ruby Color in Glass" by A. E. Williams.

Any of these may be obtained without charge by applying to R. T. Stull, Acting Director Ceramics Department, University of Illinois, Urbana, Ill.



For the Kiln Furnace

THE CANTON

Shaking and Dumping Grates

Are Sold Under an Absolute Guarantee

Convenience, Economy, Durability

are the three important features and these, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of **Canton Grates.**

These grates have now been installed on a number of plants, where the 25 per cent coal saved, the reduced amount of labor, and the control of temperature and gases have made them fixtures.

THE CANTON

is the Grate for the Plant that Counts the Cost

The Canton Boiler Grates

are installed under hundreds of boilers and are giving universal satisfaction.

Write for Bulletin B

It gives data on firing kilns using shaking grates.

The Canton Grate Co.

1706 Woodland Ave., N. W.

Canton - - - - Ohio

Determine Today

To Install The

Underwood Producer Gas Burning System

Patented

It Means Your Burning Salvation

Investigate Others Who Are Using It

The Manufacturers Equipment Co.

Everything for the Clayworkers

Dayton, Ohio U. S. A.

Freight Tariffs and Troubles

(*Continued from page* 466)

Railway Company, et al. A refund of $23.12 was allowed on account of the unreasonable rate applied on one carload of hollow building tile, forwarded from Haydenville, Ohio, to Afton, Mich., on April 6, 1914.

Hydraulic-Press Brick Company vs. the Philadelphia and Reading Railway Company, et al. A refund of $29.88 was allowed on account of an unreasonable rate applied on one carload of brick shipped from Winslow Junction, N. J., to Chester, Pa., on August 22, 1914.

National Fireproofing Company vs. the Pennsylvania Railroad Company, et al. A refund of $8.27 was allowed because of an unreasonable rate applied on one carload of hollow building brick, shipped from East Palestine, Ohio, to New Wilmington, Pa., on May 27, 1913.

Alton Brick Company vs. the Chicago, Rock Island and Pacific Railway Company, et al. A refund of $18.00 was allowed on account of an unreasonable rate applied on one carload of brick from Chicago, Ill., to Maryland Heights, Mo., on May 31, 1912.

National Fireproofing Company vs. the Raritan River Railroad Company, et al. A refund of $21.19 was allowed because of an unreasonable rate applied on one mixed carload of hollow building tile forwarded from Amclay, N. J., to Chambersburg, Pa., on May 11, 1914.

The following freight tariffs, affecting clay products, have become effective since our last issue:

Changes in Freight Rates

From Eastern Points

From Auburn, Hamburg and Pine Grove, Pa., brick, to Hazleton, Pa., $1.21 per net ton.

From Beech Creek, Clearfield, Irvona, Krebs, Lock Haven, Orviston, Patton, Mill Hall, Wallaceton and other Pennsylvania points, fire brick, to Berwick, Pa., $2.06 per net ton.

From Carteret, Chrome, Keasbeys, Maurer, Perth Amboy and Sewaren, N. J., brick, clay products and fireproofing, to Sydney, Nova Scotia, $6.09 per net ton.

From Carteret, Chrome, Keasbeys Maurer, Perth Amboy and Sewaren, N. J., brick and clay products, fireproofing and tile, to St. Johns and Sherbrooks, Que., $3.16 per net ton.

From Chester, Pa., brick, to La Tuque, Que., $5.46 per net ton.

From Clermont, St. Marys, Drummond, Kaulmont and Shawmut, Pa., clay and clay products, to Bath Beach, Gravesend, Greenwood, Kensington and 39th Street and Third Avenue, New York, N. Y., $2.42 per net ton; to Coney Island, N. Y., $2.84 per net ton.

From Dunmore, Pa., common and paving brick, to Avoca and Pittston, Pa., 37c per net ton; to Dickinson, Pa., 32c per net ton and to Yatesville, Pa., 58c per net ton.

From Dunmore, Pa., common brick, to Scranton, Pa., 26c per net ton.

From Dunmore, Pa., paving brick, to Scranton, Pa., 32c per net ton.

From Easton, Pa., clay, to East Angus, Que., 23.1c per cwt.

From Gettysburg, Pa., brick, to Coaldale, Pa., $1.80 per net ton.

From Green Island and Troy, N. Y., common, fire and hollow brick and tile, to Quebec, Que., 15.8c cwt.

From Guth, Pa., brick to Hazleton, Pa., $1.58 per net ton.

From Kaulmont and St. Marys, Pa., clay, to Coudersport and Seven Bridges, Pa., $1.62 per net ton, and to Roulette, Pa., to $1.52 per net ton.

From Kaulmont and St. Marys, Pa., brick and clay products, to Geneva, Lyons and Penn Yan, N. Y., and Knoxville, Marsh Creek and Wellsboro, Pa., $1.84 per net ton.

From Kushequa, Pa., clay products, to Hornell, N. Y., 95c per net ton.

From Mechanicsville and Troy, N. Y., common brick, to Montpelier, Richmond and White River Junction, Vt., $2.10 per net ton.

From Mill Hall, Pa., common brick, to Beech Creek, Pa., 53c per net ton.

From Philadelphia, Pa., imported clay, to Mannington, W. Va., 13.7c per cwt.

From Pittsburgh, Pa., brick and clay, to Deseronto and Peterboro, Ont., $3.58 per net ton; to Hamilton, Ont., $2.62 per net ton; to Montreal, Que., $3.88 per net ton; to Oshawa, Ont., $3.20 per net ton; to Quebec, Que., $4.94 per net ton; to Thorold, Ont., $2.42 per net ton; to Toronto, Ont., $2.84; to Wallaceburg, Ont., $2.74 per net ton and to Welland, Ont., $2.36 per net ton.

From Port Reading and Woodbridge, N. J., brick to Chambersburg, Pa., and Hagerstown, Md., $2.10 per net ton.

From Port Reading and Woodbridge, N. J., hollow brick, to York, Pa., $2.10 per net ton.

From Slate Run, Pa., common brick, to Williamsport, Pa., 84c per net ton.

From South Amboy, N. J., clay, to St. Johns, Que., $3.48 per net ton.

From Troy, N. Y., fire brick and fire clay, to Sorel, Que., $2.94 per net ton.

From Middle West Points

From Manistique, Mich., clay, to Duluth, Minn., and Superior, Wis., 8c per cwt.

From Western Points

From Sioux City, Ia., brick and articles taking same rates, to Steen and Hills, Minn., 5c per cwt., and to Bruce, Minn., Benclare, Rowena, East Sioux Falls and Sioux Falls, S. D., 6c per cwt.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ARKANSAS

The Mena Brick and Clay Company, Mena, Ark., has been incorporated with a capital stock of $25,000. The incorporators are G. W. Conklin, L. F. Conklin, D. B. Simpson and Edith Simpson.

CALIFORNIA

Reed and White of San Francisco, Cal., have secured the contract for the brick and terra cotta on a three-story apartment house to be erected on Post street near Larkin, the value of the contract being $6,100.

Manager Hoyt of the United Materials Company, San



You can discard the out-of-date, wasteful, costly open air method. Adopt the artificial way—it's scientific—practical—economical. It has already proved successful in scores of clay plants in the United States and Canada.

Sturtevant
(REG. U. S. PAT. OFF.)

Drying Systems

offer a practical solution of the drying problem. Small and large plant owners share alike in the advantages they afford. They prevent costly shut-downs and turn waste heat into profits.

Write us, answering these questions:

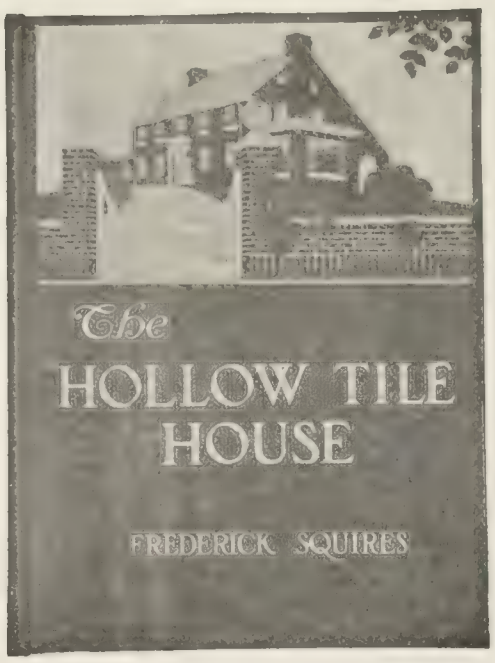
What is your product? What sort of material do you use?—if brick, state whether end or side cut. What is your total output per day? How many hours per day will your drier run? How much water has to be dried out per hour? What kind of kiln do you use? How much time is consumed in burning?

B. F. Sturtevant Company

Hyde Park, Boston, Mass.

and All Principal Cities of the World

If you make, sell or use Burned Clay Fireproofing



You Need This Book

THE HOLLOW TILE HOUSE

by Frederick Squires

is brim full of valuable information and good reading matter on this new field of hollow tile in residential construction, its history, how the tile is laid up, cost data and a host of other interesting subjects, all of which is skilfully woven by the author into a very fascinating story. A large number of illustrations give the reader an idea of the architectural beauties and possibilities of the hollow tile house. It will be time well invested to read this book.

ORDER A COPY NOW.

PRICE $2.50

Book Department

Brick and Clay Record

CHICAGO

Francisco, Cal., distributors of the output of the Los Angeles Pressed Brick Company, is now visiting the Los Angeles plant of that company.

A two-story brick business block is to replace the small frame buildings that have stood for a number of years at the corner of Thirty-fifth Street and Sacramento Avenue, Sacramento, Cal. In this, like in many other towns and cities, frame is gradually giving way to more permanent and fireproof materials in the march of progress.

W. A. Smith has succeeded G. E. Green as superintendent of the Maryville (Cal.) branch of the Pratt Building Material Company, brick and material dealers with headquarters in San Francisco. This company has contracted to supply a large quantity of paving brick and red brick for the Western Sugar Refinery in San Francisco.

E. T. Thruston, Jr., director of the General Contractors' Association of San Francisco, who has just returned from a meeting of the National Association of Builders' Exchanges at Columbus, Ohio, reports that the association decided to hold an "American Builders' Week" in San Francisco at the Panama-Pacific Exposition during the week beginning October 18th. Headquarters for this project have been established at the Sharon Building, San Francisco.

The Los Angeles Pressed Brick Company, of Los Angeles and Richmond, Cal., has placed three attractive displays in the Panama-Pacific International Exposition. In the California Counties building the company has placed an exhibit of red pressed brick from its Richmond plant. In the Varied Industries building the company has completed the installation of an exhibit of the lines made at its Los Angeles plant. A showing of sectional sewer brick has been made in the Building of Mines and Matallurgy. Beside these special exhibits, the company has supplied floor tile and roofing tile for the model, modern, low cost, fire-resistant residence, recently completed by the brick manufacturers near the Massachusetts building.

CONNECTICUT

The boarding house at the Kensington Brick Company's yard, Berlin, Conn., was damaged by fire recently to the extent of about $2,000. The building which was two stories in height and constructed of frame, was unoccupied at the time of the fire.

F. L. Stiles, E. G. Stoddard, H. W. Redfield and J. F. Reynolds, all of New Haven, Conn., have organized the North Haven Brick Company and have filed a certificate of incorporation with the secretary of state at Hartford. The paid in capital is placed at $15,000.

GEORGIA.

The Bibb Brick Company, Macon, Ga., is seeking a longer lease on the land on the city reserve now occupied by its plant, and in return, offers to surrender a portion of the ground already leased to the company for fifty years. The public property committee of Macon is now making an investigation.

ILLINOIS

The property and plant of the Lowell Pottery Company, Lowell, Ill., was sold at a sheriff's sale recently. This concern was owned by John Hartenbower, also owner of the defunct Tonica (Ill.) bank. The property was purchased by C. T. Ward, former superintendent of the plant, who, it is understood, intends to make a new start and operate the plant himself. It is generally believed that the plant can be made to pay a profit under the new management.

INDIANA

Dan Downey of Murphysborough, Ill., who succeeded C. J. Leslie as assistant manager of the Bloomfield Brick Com-

pany, Bloomfield, Ind., is devoting his time to a general overhauling of the Bloomfield plant.

Gary Sand-Lime Brick Company, Hammond, Ind., has been incorporated with a capital stock of $150,000, to manufacture brick and other products. The directors of the company are George M. Eder, Conrad Peterson and Englehardt Ullrich.

The American Clay Company and the Vigo County Clay Company, have been merged into the Vigo-American Clay Company, Terre Haute, Ind., with a capital stock of $75,000. J. L. Crawford, H. S. Preston and L. R. Whitney are the directors of the new concern.

The Elk's new home in Brazil, Ind., which is now under construction, will probably be the most attractive building in that city. The face brick that is being used on the outer walls will give this building a distinctive appearance. The new brick is dark red in color and has a face which is roughened in imitation of chinchilla cloth.

The Indiana Brick Club held its monthly meeting at the Claypool Hotel, in Indianapolis, recently. The meetings of this club are generally of a social nature, although it was organized for the purpose of stimulating the use of brick as against other building materials. The club has adopted the slogan "Build with Brick." The club was organized two years ago and now enjoys a membership of fifteen. The officers are A. C. Davis, of the Western Brick Company, Indianapolis, president and E. C. Hervey, of the Hydraulic-Press Brick Company, Indianapolis, secretary.

KANSAS.

It is reported that the Seneca Shale Brick plant, at Seneca, Kan., will resume operations the first week in March, under the active management of K. W. Klose. The plant was purchased by new interests after the bankruptcy proceedings of last fall.

The past few years have been hard ones for Kansas cement manufacturers. It is said that only those plants close to large building operations have been able to sell cement at a profit, the price being below cost of manufacture for some Kansas companies. The Altoona Portland Cement company went into the hands of a receiver the middle of February.

KENTUCKY.

C. F. Herrman, of the United States Brick Company, of Tell City, Ind., was in Louisville recently calling on some of the local brick jobbers.

John L. Wheat, president of the Union Cement and Lime Company, Louisville, has said that while the company no longer has the agency for the Hydraulic-Press Brick Company, his the agency for the Hydraulic-Press Brick Company, his concern had no intention of dropping out of the brick business, and that he expected to take on several other agencies and continue jobbing high-grade face-brick.

A. P. McDonald, sales manager for the P. Bannon Pipe Company, Louisville, manufacturers of sewer pipe, terra cotta and tile, was married recently to Miss Lillys Burns, of Louisville, and left immediately for a three weeks' trip to the North. The couple will visit Detroit, several points in Canada and will return by way of New York. The wedding was somewhat in the nature of a surprise to Mr. McDonald's many friends.

Arrangements have been made whereby the R. B. Tyler Company, of Louisville, will handle the products of the Columbus Brick and Terra Cotta Company, Columbus, Ohio. The line was formerly handled by W. J. Watkins and Company. The R. B. Tyler Company has also taken on lines manufactured by the Iron Clay Brick Company, of Union



Low Price of Cotton Reduces Cost of Gandy Belting

THE present low price of Cotton makes it possible for us, while maintaining strictly the high quality of our product, to reduce the price of

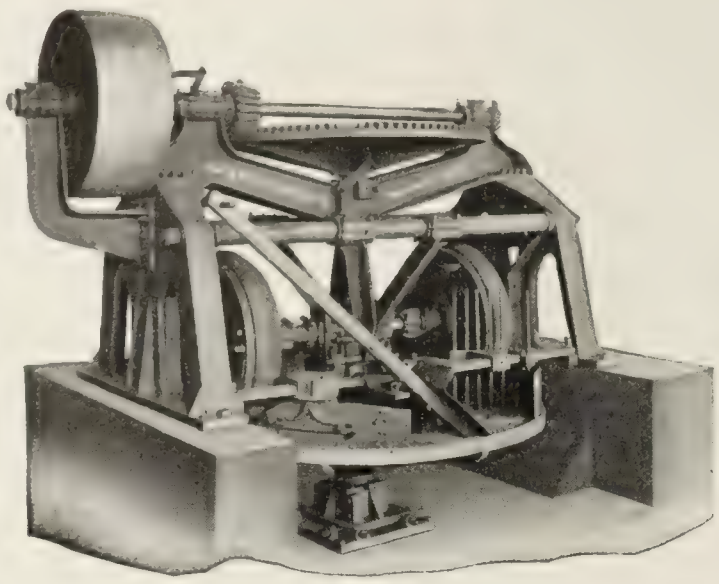
GANDY
Stitched Cotton Duck
BELTING

On the other hand the scarcity of hides compels the manufacturers of leather belting to put up their price. Take advantage of existing conditions. Buy Gandy and save money. The initial cost of Gandy is only about one-third that of Leather Belting and less than that of Rubber Belting, while it does the work equally as well.

The saving is obvious. Let us help you reduce your belting costs.

The Gandy Belting Company
732 W. Pratt St., Baltimore, Md.
New York Office: 36 Warren St





Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

City and Columbus, Ohio, and the Alliance Brick Company, of Alliance, Ohio.

Fifty men have returned to work at the Paducah Pottery Company's plant, Paducah, Ky., after being idle since the holidays. During this period the production of the plant was reduced to a minimum. According to S. T. Howard, secretary of the company, the pottery now has enough orders ahead to insure operations for some time to come, and it is more than probable that a still larger force of men will be put to work to fill the orders.

Louisville, Ky. lost one of its most prominent clayworkers when death ended the long illness of Mahlon J. Keim, secretary and treasurer of the Keim Brick Company, Mapleton, and the Louisville Brick and Tile Company. Mr. Keim became sick early last spring and he gradually grew weaker until his death. His trouble began with pleuro-pneumonia, which developed into tuberculosis. Mr. Keim had a reputation of never being afraid of work, and it is said that when his health was good he could transact a large volume of business.

Joe Nevin, manager of the Louisville Brick Company, has stated that he is now working a full force of fifty men in the plant. The company is making deliveries on a number of large local school house jobs. Officers of the company have not decided definitely as to whether they will manufacture fancy face and salt-glazed brick this season or not, as a number of expensive alterations would have to be made in kilns at the plant and it now looks as though the company will be very busy handling common red brick.

The Tyler Building Supply Company, which recently took over the agency for the Hydraulic-Press Brick Company in Louisville, is starting off well this season, having recently been awarded the contract for the face-brick and terra cotta on the new Bernheim building which is to be erected on Fourth Street near Broadway at a cost of about $100,000. The award was made through the office of Joseph and Joseph, architects. The Tyler concern will furnish a quantity of very handsome terra cotta, manufactured by the Atlantic Terra Cotta Company, of Pittsburgh, and about two cars of face brick for the front of the building. The side walls will be built of common brick, the contract having been awarded to the East End Brick Company.

MASSACHUSETTS.

Preparations for an early opening of spring business are being made at the plant of the Goodwin Brothers Pottery Company, West Hartford, Mass. The business of the concern is now conducted by H. B. Goodwin and his son Wallace B. Goodwin.

Joseph W. Moore, Maxwell A. Metzner and Henry S. Ormsby are the incorporators of the Argo Tile and Pottery Company Inc., of Boston, Mass. A new plant is to be erected for the concern in Everett, Mass., a few miles from Boston which it is estimated will cost $40,000. Contracts for the building have been let and work is to start soon.

MICHIGAN.

The New Baltimore Brick and Tile Company, of New Baltimore, Mich., has been incorporated for $15,000 and will manufacture both brick and tile.

The Athens Brick Company, Detroit, has the contract for furnishing the City of Battle Creek, Mich., with 200,000 paving brick to be used this summer.

The Dresden Brick Company, Hammond Building, Detroit, has taken the exclusive Detroit agency for the products of the Hay-Walker Company, of Pittsburgh, Pa.

One of the most novel and finest brick fire-places in De-

troit is being built in the new residence of George H. Clippert, brick manufacturer, on the Chicago boulevard. The house itself is also of brick, the exterior being of Claycraft brick furnished through the Detroit Brick Sales Company.

John A. Mercier, of Mercier, Bryan and Larkins Brick Company, Detroit, has been elected as a director of the new Detroit Speedway Club, which proposes to erect an immense automobile speedway on property which it recently acquired near Wyandotte, on the Detroit river. The fact that Mr. Mercier, as well as John S. Haggerty, also a brick manufacturer, is on the directorate, and is also a large holder of stock in the company, lends belief to the possibility that much of the speedway track will be built of brick.

The Walker and Frank Brick Company, Detroit, is now producing about 100,000 common brick per day, working both a day and night shift. This capacity has been maintained since April of 1914, up to which time only 60,000 brick were made per day. The company's entire output is sold to the United Fuel and Supply Company, dealers in builders' supplies, with offices in the Free Press Building. Not only will the company continue to make this number of brick daily, but will likely increase the production before the end of the summer. It recently acquired twelve additional acres of land, making a total of thirty acres as its property.

MINNESOTA.

The Minnesota Tile Company, which was recently incorporated by J. S. McLaughlin, W. H. McLaughlin, D. W. McLaughlin and J. A. McLaughlin of Red Oak, Ia., has purchased a strip of land along the Blue Earth River, near Mankato, Minn., where it will erect a plant. Just as soon as the frost is out of the ground, excavation will be started for the plant which the company hopes to have completed by April 1st. Drain tile and sewer pipe will be the chief products, as there is a good local demand for these commodities.

MISSOURI.

A. J. Hazleton, manager of the Kansas City office of the Hydraulic-Press Brick Co., is in St. Louis for a week or so.

Flannagan-Zeller Brick and Manufacturing Company, Kansas City, Mo., has been incorporated with a capital stock of $30,000, to manufacture brick.

The drain tile business in Kansas City has remained about normal during the past few weeks. The plants, however, are all working with feverish haste, marking the coming of spring, and dealers are stocking up expecting a brisk spring and summer business.

Building operations are beginning to open up somewhat as prophesied in Kansas City, Mo., for the spring. The Graphic Arts building and the Merry building are under way and several other buildings are about to be started. The contract will probably be let very soon for a new hotel at Ninth and Main streets, Kansas City.

A large terra cotta contract is about to be let in Kansas City, for the new hotel at Ninth and Main streets. There are many small buildings, of one and two stories, built recently or now under construction, on which terra cotta has been used. Some of these are entirely faced with this material.

The Walter S. Dickey Clay Company, Kansas City, announces the shipment of drain tile to small towns throughout the state. These contracts total about twenty and all are small ones. The company's plant has been operating steadily, and is prepared for the usual increase in business that comes in the spring.

The New Florence Brick Company, New Florence, Mo., a

Napoleon and Caesar

Were the World's Greatest Egotists



but they have nothing on Me.

Either could move thousands of men hundreds of miles by word of mouth but neither could move one small supply wagon alone, while I with "Helper Bill" can easily move any loaded car that's on the tracks.

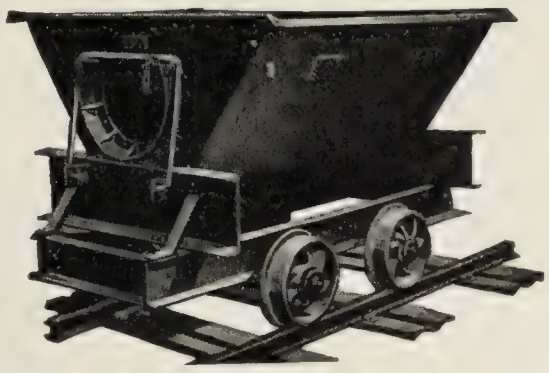
and $4.00 Hires Me for Life

Yours for moving cars

"IDEAL" Car Mover

P. S. Send for me for trial. No obligation to purchase

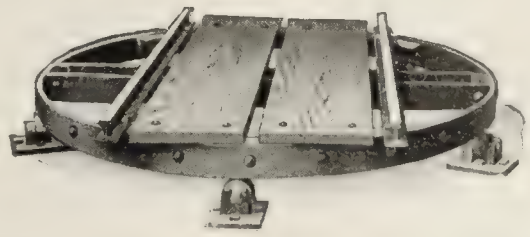
Sackett-Equipment



reduces your handling costs.

We specialize in clay plant equipment, including Elevators, Screens, Track, Switches, Transfer Cars and

Turntables



Let us figure with you on your requirements.

Write TODAY for our catalogue

H. B. Sackett Screen & Chute Co.

1681 Elston Avenue

Chicago

Branch Warehouse

191 Medford St., Charlestown, Mass.

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press
Auger Brick Machines
Down Delivery Tile Mills
Oil Burning Equipment
Crude Oil Engines
Piano Wire Screens
Dry and Wet Pans
Soft Clay Brick Machines
Pug Mills
Wet and Dry Clay Disintegrators
Smooth and Conical Roll Crushers
Wood Moulds
Trucks and Barrows
Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.
20 W. Jackson Blvd. Chicago, Ill.

newly organized concern, has completed its plant and has begun the manufacture of fire brick. The plant, which is said to have cost $75,000, will have a capacity of 70,000 brick per day. It is expected that this capacity will be doubled this season. The plant employs about one hundred men.

The Kansas City Terra Cotta and Faience Company, Kansas City, Mo., has recently filled contracts for terra cotta on a ten-story office building at Springfield, Mo., a high school at Boonville, Mo., the Masonic Temple at Leavenworth, Kan., and a bank. The company is now supplying material for a bank building at Newton, Kansas. It also has the contract for the new office building at Tenth and Locust Street to be erected by Loch Sawyer.

It is said that eastern terra cotta manufacturers are getting considerable business in Missouri, Kansas and other parts of the West where building operations are proportionately brisker than elsewhere. One western manufacturer put it that these states are maintaining the East. The low quotations, while they will have an injurious effect in making it more difficult to re-establish normal prices, are resulting in a considerable increase in the use of terra cotta. This fact may, after all, be substantially beneficial in spreading the acquaintance of builders with that material.

The Randazzo-Ford Jewelry Company which recently opened a new store in Kansas City, has its salesroom on the ground floor and its repairing and manufacturing department in the basement of the building. It happens that the basement walls are constructed of unglazed hollow tile, because in refining gold, silver and platinum and in manufacturing jewelry it is necessary to use strong acids. If the acid happens to be thrown on the wall, the tile will soak it up retaining its normal color. The feature of this is that the acid will not eat the tile and for this reason the room is one of the most sanitary jewelry rooms in the city. In soaking up the acids the tile keeps the room free from the fumes of the acids to a great extent.

Kansas City has been compelled to revise its regulations covering bonds for the maintenance of street paving. For several years ten-year bonds were required, but very few of the asphalt and certain other paving materials would stand ten years even with extensive repairs. The result was that the contractors and the bonding companies took the position that they should not be required to maintain for ten years a pavement that common sense and experience demonstrated should not be expected to last that long. The maintenance bonds are now written for five years. It is notable in this connection that brick paving is about the only kind that has stood the test of the ten-year maintenance requirement. Other pavements are in such bad condition that they cannot be repaired. The holes are filled, and the public waits until the bond period has expired to get new pavement laid, for no tax bills for new work can be issued against the property until the existing bonds expire.

OHIO

The Hydraulic-Press Brick Company, of Toledo, Ohio, has added three hundred more feet to its offices in the Ohio Building.

The Anders Shale Brick Company, Cincinnati, Ohio, has been incorporated by Adam C. Anders and other with a capital stock of $40,000.

The Trumbull Clay Products Company, Leavittsburg, Ohio, has been incorporated with a capital stock of $20,000, by E. C. Wolcott, J. W. Wolcott, L. C. Wolcott, F. F. Rowland and C. M. Bixler.

The Moores-Coney Company of Cincinnati, Ohio, is completing an addition to its display of face-brick, a separate

room being devoted to the products of one of the companies whose goods it sells. The company occupies the entire ninth floor of the St. Paul Building.

J. C. Crigler, former manager of the Gaddis-Harrison Brick Company, Dayton, Ohio, and P. D. Dyke, formerly of the Sidney Manufacturing Company, have opened offices in the Arcade building in Dayton, under the corporate name of the Gem City Brick Sales Company.

Favorable weather enabled the Webster Brick Company, of South Webster, Ohio, to carry out its plan for beginning operations at its new plant on February 22. The plant was finished in due time, being of the most modern type in every detail, with a capacity of 60,000 high-grade vitrified paving brick per day.

The National Paving Brick Company, of Columbus, Ohio, in line with its recent decision to change its location from Columbus to Zanesville, Ohio, in order to be close to a large supply of raw material, has filed amended articles of incorporation making the change in its legal address, and reducing its capitalization from $400,000 to $100,000.

The American Sewer Pipe Company, of Akron, Ohio, is experimenting in the use of natural gas in one of its kilns, with a view of installing facilities for the use of that fuel throughout its plant if the experiment proves successful.

The corporate life of the Oliver China Company, at Sebring, Ohio, will cease March 6, when the stockholders of this concern will meet to surrender their charter. This plant was for many years under the management of George E. Sebring, and some time ago was taken over by the E. H. Sebring China Company, which is now successfully operating it. The Oliver plant was one of the first to be built in Sebring.

"Ben" Fisher, superintendent of the Columbus (Ohio) Brick & Terra Cotta Company, visited the trade in Cincinnati recently, en route home from a trip covering Louisville and other Ohio Valley points. Mr. Fisher expressed himself optimistically concerning prospects for business, pointing to various indications of reviving activity in the building field, and stating that his company is making preparations for a big spring and summer demand.

The Burton-Townsend Company, of Zanesville, Ohio, which was organized a few months ago by the consolidation of a number of different concerns, reports that prospects are excellent for good business. The company received an inquiry recently from the street commission of Detroit, asking prices on five million brick to be used for paving in that city. Thousands of this company's brick are being used in the vicinity of Zanesville.

Some extensive brick highway work has been started in Guernsey county, in the vicinity of Zanesville, Ohio, by Ayers and Kappes, contractors in charge of the work on the national highway in that section. More than 800,000 brick were placed along the road in preparation for the resumption of work with the passing of severe weather. Conditions recently have been such that the firm has been able to place a considerable force at work preparing for the actual laying of the brick on the road.

Cincinnati material men are awaiting with considerable interest the report of Architects Rankin, Kellogg and Crane, of Philadelphia, on the hundred or more bids submitted and opened on February 16, covering the work of building the new Cincinnati courthouse. Brick men, of course, are very much interested, in spite of the fact that the exterior of the building will be of limestone or granite, for the reason that there will be about a million common brick used, as well as a large quantity of enameled or other face brick and tile. The architects are expected to report within a short time.

GET READY

for the

RUSH OF ORDERS

Build, Enlarge or Repair and Do It Quick

Let these Money-Makers tell you where to buy:—

Utica Fire Brick Co.—"About 14 or 15 years ago we bought a Stevenson Dry Pan, and want to say it is the best pan we have ever seen in use—have never had occasion for repairs up to this date."

Scioto Fire Brick Co.—"Purchased Stevenson's Dry Pan 13 years ago. It has ground over 14000 tons per year of hard shale and is good for several years yet."

Kittanning Brick & Fire Clay Co.—"We've been running Stevenson's Dry Pan a good many years with little or no trouble. Ground clay to make 10800 brick yesterday (24 hours) **on one pan.**"

Alliance Clay Product Co.—"We grind material for 56000 brick a day." (One Stevenson pan).

American Fire Brick Co.—"Stevenson's pans are the best on the market—have had two in use 5 years without a single break-down."

Ridgway Brick Co.—"Does it interest you to know we are grinding 40000 brick per day on one Stevenson Dry Pan? We think it 'goin' some.'"

Ross Rue—Veteran Brick Maker—"The Stevenson Dry Pan will do as much work as **any two other pans** on the market."

Savage Fire Brick Co.—"During 30 years experience we regard the Stevenson Wet and Dry Pans the **best in use.** They will grind more clay and in better condition than any other."

Evans & Howard Fire Brick Co.—"Your press is turning out about 50% more material than our old press."

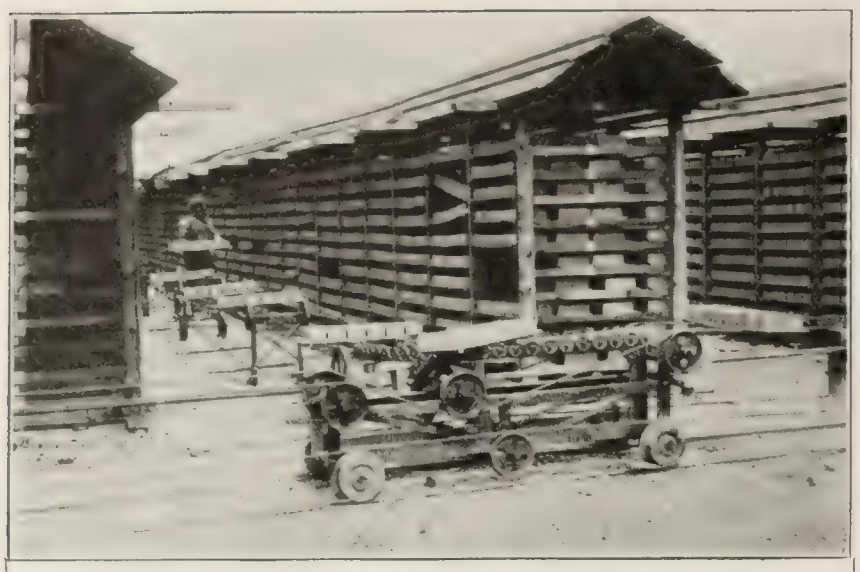
Cannelton Sewer Pipe Co.—"You make the best press, pans and clay-working machinery on the market."

Dominion Sewer Pipe Co.—"Our press (Stevenson's) is the best in Canada."

There's Plenty More

The Stevenson Company

Wellsville, Ohio



Patented May 2, 1911.

RAIN OR SHINE

Our first system

Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men."

Our last system

The Donnelly Brick Co., New Britain, Conn., says:

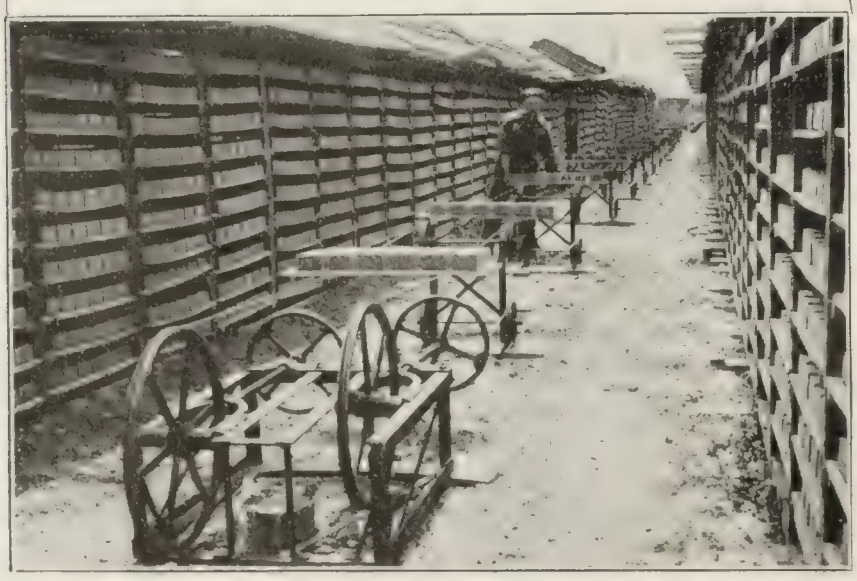
"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"

Write for literature and prices.

The Marinette Iron Works

C. J. Anderson & Son, Proprietors

Marinette, Wis.



after a complete tabulation and classification of the bids, and the awarding of the contract will then be up to the courthouse commissioners.

The fact that the new Hamilton County courthouse, to be built this year in Cincinnati, Ohio, will call for something like 8,000,000 common brick, besides proportionate quantities of salt-glazed brick, enameled brick, terra-cotta trim, and some face brick, explains the deep interest which is felt in this job by local burned clay people. The letting of contracts is expected to call forth some warm competitive bidding, although as a matter of course the common brick, which is by far the largest single item on the list as far as the clay lines are concerned, will probably go to a local plant, sentiment being largely favorable to the use of Cincinnati material as well as labor.

The recent flood stage of the Ohio, and of its tributaries over a wide section, threatened to do considerable damage to various clayworking plants, and did in fact put a stop to operations in many of them. At Cincinnati, where several of the plants are located in the immediate river valley, the water invaded the yards, but as most of them were not running, little harm was done. The roadway connecting the plant of the Cincinnati Brick Company with the street was submerged, cutting the plant off from communication with the city, except with considerable inconvenience. At East Liverpool, the center of the pottery district, the three potteries of the Harker, Thompson and Cartwright Company were flooded by the Ohio, placing them entirely out of commission for several days, and throwing the thousand or more employes out of work. The water receded, however, after a short time, and following the necessary cleaning and drying of the inundated sections, work was resumed.

The Cincinnati Brick Club, which consists of the Moores-Coney Company, the Pursell-Grand Company, the L. H. McCammon Brothers, the Brick Sales Company and the Cincinnati Clay Products Company, recently did its share in the work of pushing the "Build with Brick" campaign in this vicinity, the members gathering on Government Square in automobiles and scattering to the four winds with an ample supply of signs. Advantage was taken of an interval of fairly good weather for this purpose, and while the local territory was not covered by any means as closely as it will be ultimately, some good work was done. The Cincinnati club, inasmuch as it sells face-brick not only in Hamilton county, Ohio, but in the two Kentucky counties immediately across the river—Campbell and Kenton—is one of the few organizations which is called upon to work in two states, but this will not by any means hinder its operations, as the territory is a rich one, and comparatively well concentrated, in spite of being divided by the wide Ohio river.

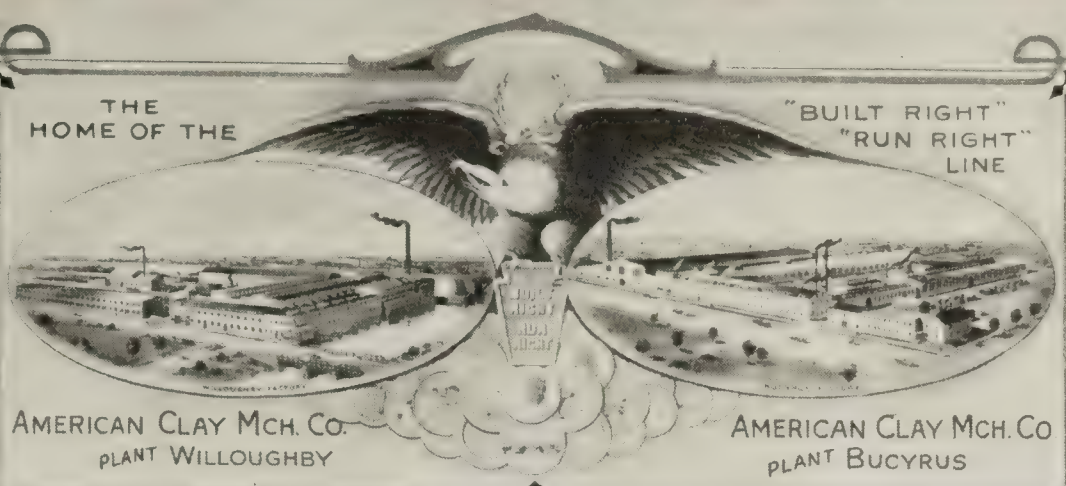
PENNSYLVANIA

Charles S. Flower, a dealer in brick and building materials at Sharon, Pa., is now on a tour of the Pacific Coast.

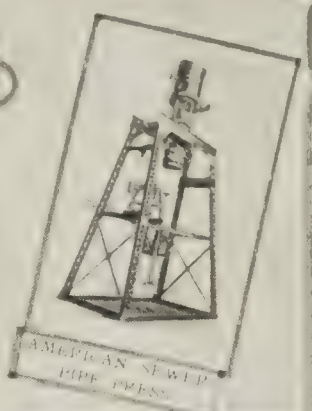
The Alwine Brothers Brick Company, Berlin Junction, Pa., has been incorporated with a capital stock of $30,000, by W. C. Alwine, L. H. Alwine and M. K. Alwine.

The plant and property of the Wm. F. Stimmel Brick Company, Kutztown, Pa., has been leased by Keiser and Miller, of Topton, Pa., for a period of two years. The new proprietors will open the plant within a few days.

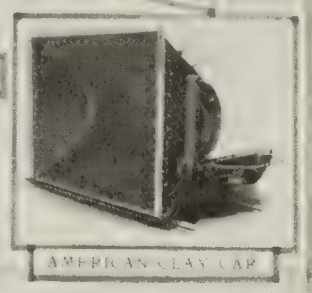
William S. Wertz, superintendent of the Pinegrove Vitrified Brick Company, of Pinegrove, Schuylkill, Pa., left for his home in Canada, where he will visit for a brief period. Mr. Wertz will then return and take charge of a large brick plant in Ohio.



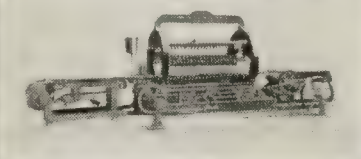

AMERICAN No. 292 REPRESS

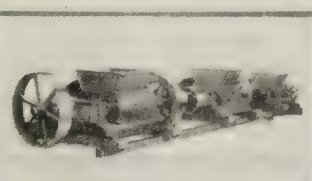

AMERICAN SEWER PIPE PRESS

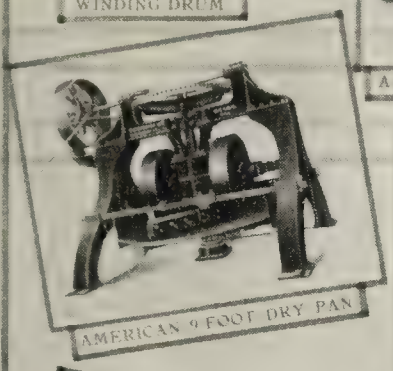

AMERICAN No. 245 WINDING DRUM


AMERICAN CLAY CAR

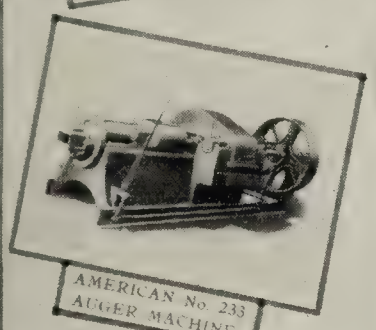

AMERICAN No. 291 PUG MILL


AMERICAN No. 20 ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN 9 FOOT DRY PAN


HAIGH CONTINUOUS KILN


AMERICAN No. 233 AUGER MACHINE

Spring Openings

It's time to open your clay pit.
It's time also to dig into methods.

A steam shovel will dig for you both in the clay pit and in modernizing your equipment.

A lessening of clay cost means an increase in profits.

Our Steam Shovel is built for clay pit work. It's not for railway construction nor canal building but especially for the clay worker.

It has many clay plant features which we would like to tell you about. Let us send our catalog. It's full of figures, facts and photos.

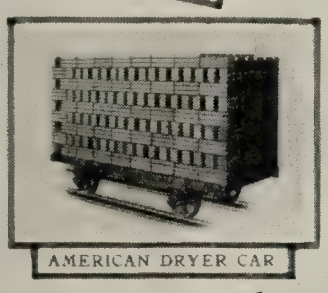
It's Haigh Kiln time too. Nothing like the Haigh Continuous Kiln for saving cost. A half the fuel and a half the labor. Better material too. Ask for Catalog.

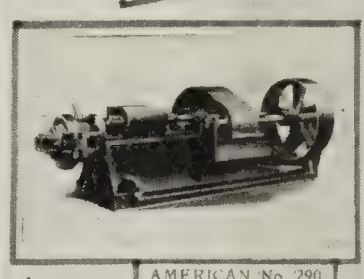
We make every machine and appliance needed for making clay products by all processes. Let us have a word with you about large or small wants.

The American Clay Machinery Co.

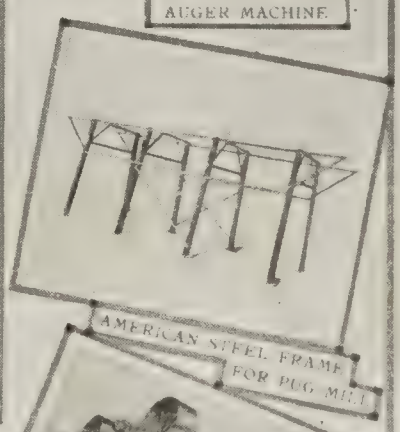
Bucyrus, Ohio


AMERICAN WASTE HEAT DRYER


AMERICAN DRYER CAR

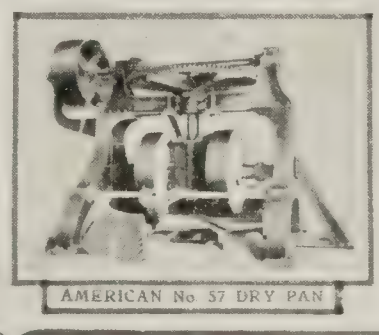

AMERICAN No. 290 AUGER MACHINE

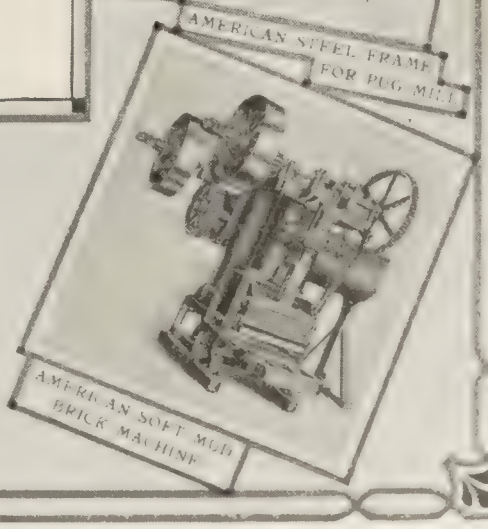

AMERICAN STEAM SHOVEL


AMERICAN STEEL FRAME FOR PUG MILL


AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No. 57 DRY PAN


AMERICAN SOFT MUD BRICK MACHINE

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Deavitt, H. M.

Aerial Tranmways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Stevenson Co.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Link-Belt Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Mathews Gravity Carrier Co.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Stevenson Co.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.
Martin Brick Mach. Mfg. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Manufacturers Equip. Co.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Car Movers.
Marion Machine, Fdry. & Sup. Co.
Sackett Screen & Chute Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.

Cement Filler.
Lehigh Portland Cement Co.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.
Stevenson Co.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Link-Belt Co.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal.
Logan & Kanawha Coal Co.

Coal and Ash Conveyors.
Link-Belt Co.

Coloring.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Machine Mfg. Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Stevenson Co.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Draft Gages.
Ceramic Supply & Cons. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Martin Brick M. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Phillips & McLaren.
Stevenson Co.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

Barrett's PAVING PITCH



Irving Park Boulevard, Chicago, Ill. Brick and Granite Pavement filled with Barrett's Paving Pitch.

The Seal of Superiority

A FILLER that seals the pavement both winter and summer, so that water and frost cannot attack the foundation, is absolutely essential.

Only one filler can be relied upon to maintain a perfect bond for all seasons, and that is a *reliable paving pitch.*

Brick shrinks away from asphalt in cold weather, causing cracks between the blocks. Cement does not allow for expansion in hot weather, and cracks and "blow-outs" result.

Good paving pitch has none of these faults. With it street repairs can be easily, quickly and economically made. It will outlast the pavement itself—and the initial cost is low.

Not all pitch is reliable—don't take chances—use a proved pitch, made especially for the purpose. Barrett's is just that.

Illustrated booklet free on request.

BARRETT MANUFACTURING COMPANY

NEW YORK CHICAGO PHILADELPHIA BOSTON ST. LOUIS CLEVELAND CINCINNATI
PITTSBURGH DETROIT BIRMINGHAM KANSAS CITY MINNEAPOLIS
SALT LAKE CITY SEATTLE

THE BUYERS' DIRECTORY—Continued

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Link-Belt Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Mathews Gravity Carrier Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Copping Bros.
Cutshall & Cutshall.
Deavitt, H. M.
Freese & Co., E. M.
Frink Pyrometer Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Equip. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Copping Bros.
Freese & Co., E. M.

Explosives.
Du Pont Powder Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Stevenson Co.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Fuel Economizers.
Sturtevant Co., B. F.

Furnaces.
Brown Instrument Co.
Stupakoff Laboratories.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Fate, J. D. Co.
Link-Belt Co.
Nuttall Co., R. D.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Insurance.
Read & Day.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Klose, K. W.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Equip. Co.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Locomotive Cranes.
Link-Belt Co.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Ricketson Mineral Paint Wks.
Wiliams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Paving Joint.
Barber Asphalt Paving Co.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Cincinnati Frog & Switch Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.

Powder.
Du Pont Powder Co.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Stevenson Co.
Wallace Mfg. Co.

Pug Mill Repair Parts.
Lehigh Car, Wheel & Axle Wks.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.
Thwing Instrument Co.

NATIONAL FIRE PROOFING CO.

Hobart, Ind., Jan. 4th, 1909.

Martin Grate Co.,
Chicago, Ill.

Gentlemen:

Replying to yours of the 30th ult. regarding our grates, will state that the grates you furnished us have been entirely satisfactory, very few repairs being necessary, and I am sure it saves us a certain amount on coal bills.

Very truly yours,
(Signed) W. B. Owen, Supt.

IRON CLAY BRICK CO.

Columbus, Ohio, March 19, 1910.

Martin Grate Co.,
Chicago, Ill.

Gentlemen:

In reply to your favor of the 4th, we beg to say that the Martin Grates installed in 1907 at our factory have proven eminently satisfactory. Our engineer is more than pleased. They seem to meet all of your claims.

They are not only labor and fuel savers, but permit us to burn a poorer quality of coal than we could do with the old style grates. They do not warp, and the indications after a year or more's use are that they will last many years.

We surely would not think of putting in new boilers without using Martin Grates. Very truly yours,
(Signed) J. M. Adams, Gen. Mgr.

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10th, 1914.

Martin Grate Co.,
Chicago, Ill.

Gentlemen:

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.
(Signed) C. A. Reaver, Secy.

PORTLAND DRAIN TILE CO.

Portland, Ind., Aug. 17, 1914.

Martin Grate Co.,
Chicago, Ill.

Gentlemen:

We have your favor of the 14th at hand and in reply will say that the grates that we purchased of you in 1910 and 1913 are still in use. They are giving us the best satisfaction and are the most excellent grates we ever used under our boilers.

Yours truly,
Portland Drain Tile Co.

LOGAN CLAY PRODUCT CO.

Logan, O., Sept. 17, 1910.

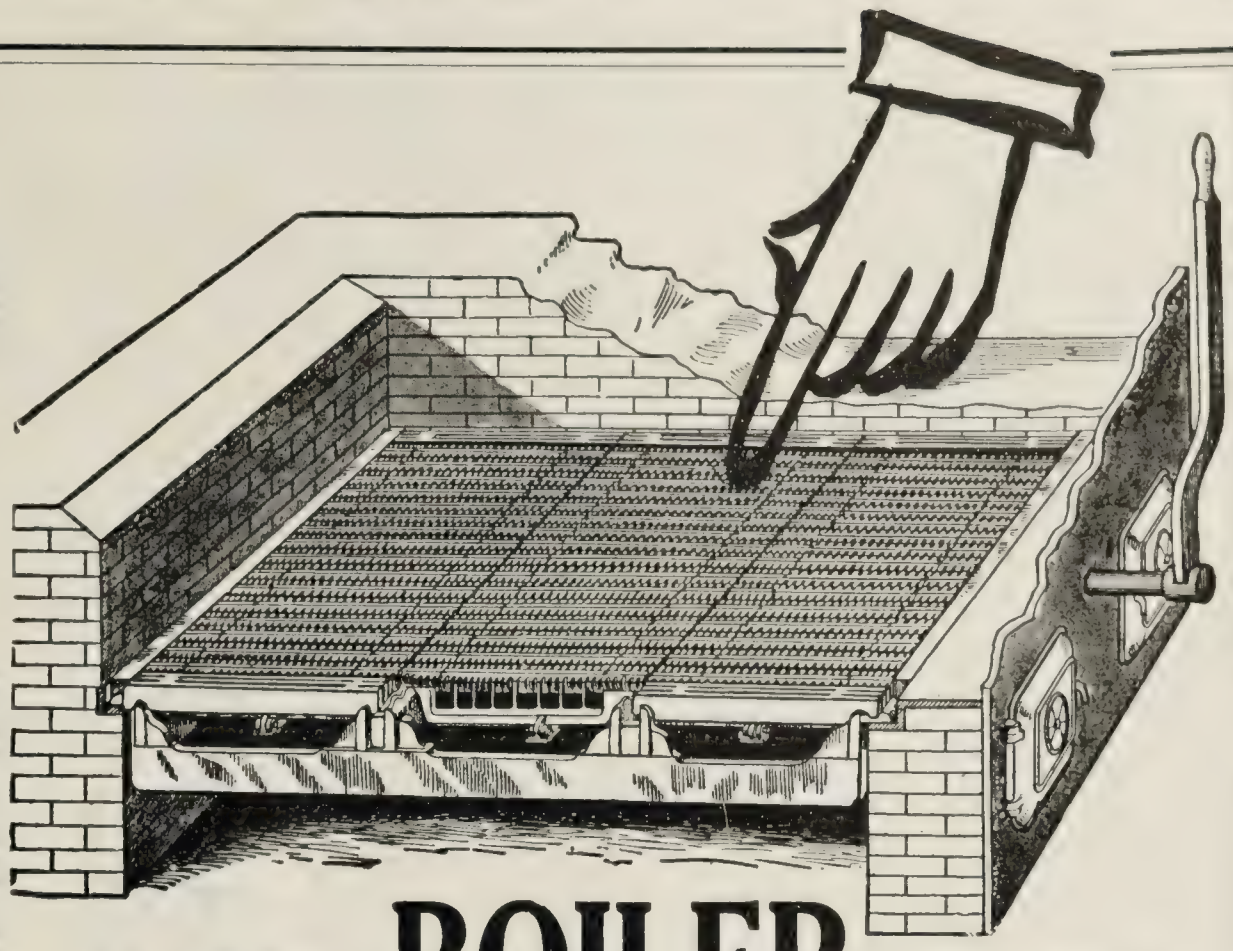
Martin Grate Co.,
Chicago, Ill.

Gentlemen:

In reply to your inquiry of the 12th inst. we find that the Martin Grates were purchased from you at the time we set our new boilers, and have been constantly in use for nearly three years.

We are pleased to advise you that they have given us entire satisfaction.

Yours very truly,
The Logan Clay Product Co.



MARTIN BOILER GRATES

Make Cheaper Steam — Use Any Coal You Wish

Slack or Screenings Burned on a Martin Grate Can Be Made to Give the Steam Produced on Common Grates with Steam Lump

Get a report of your last year's fuel expense. Figure what the same tonnage of slack and screenings would cost. Consider the difference between these two—and you have gathered some vital figures. You've uncovered lost dividends way up in the hundreds of dollars. Those figures represent the revenue you would have earned over and above the dividend you paid.

Yet to burn slack or screenings all you need is a furnace adapted to these grades and that means first, last and all the time—

A Martin Non-Dumping-Anti-Frictional Grate

If you buy a Grate by a picture—a catalog or salesman's description—or a miniature model—you may pick any one of a dozen different styles and makes.

If you buy on account of RESULTS obtained you MUST come around to a MARTIN. You want RESULTS. You can buy pictures, technical lectures, hot air and mechanical freaks easily and cheaply—but you PAY FOR YOUR COAL! And you pay for it EVERY month—not once in eight or ten years.

MARTIN GRATES SHOW RESULTS.

Not in one locality—but all over North America.

Not in one grade of fuel—but on practically every coal mined in the country.

Not under boilers of one style carrying steady loads, but of every type built, and varying loads up to double rated capacity.

It is worth the trouble of reading the letters on the left. They are HONEST and INTELLIGENT. They STATE FACTS and SHOW RESULTS. Will you read them?

THE MARTIN GRATE CO.

347 S. Dearborn St. Chicago, Ill.

THE BUYERS' DIRECTORY—Continued

Quartz Glass Articles.
Engelhard, Chas.

Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Frank, M. K.
Foster Co., L. B.
Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial.)
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Ratchet Wrench.
Chicago Mfg. & Distributing Co.

Rattler.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.

Revolution Indicators.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.
Cling-Surface Co.

Roofing Tile Machinery.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Martin Bk. Mach. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Link-Belt Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Stevenson Co
Weller Mfg. Co.

Sewer Pipe Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.
Stevenson Co.

Shale Planer.
Arbuckle & Co.

Shovels (Hand).
Sackett Screen & Chute Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Soft Mud Brick Machines.
American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Wallace Mfg. Co.

Sprocket Wheels.
Link-Belt Co.

Steamers (Clay).
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.
Brown Instrument Co.

Steam Separators.
Canton Grate Co.

Steam Shovels.
American Clay Machy. Co.
Erie Engine Co. (Erie Steam Shovels)
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Stevenson Co.
Wallace Mfg. Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Towers.
Caldwell Co., W. E.

Supplies.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Stevenson Co.
Wallace Mfg. Co.
Weller Mfg. Co.

Tanks.
Caldwell Co., W. E.

Absolute Control



of the drying elements—heat, humidity and circulation of air. That's what you *must have* to assure satisfactory drying of your product. Ask *users* of

The Standard Brick Drier



about this vital feature. They'll tell you. You'll find a list of Standard Drier users in the catalog, sent on request. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Wallace Mfg. Co.

Tile Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co
Standard Dry Kiln Co.

Tramways.
Ambursen Co.

Transfer Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.

Unloading Devices for Pans.
American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.

Water Tanks.
Caldwell Co., W. E.

Wet Pans.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles (Car).
Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.

Winding Drums.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

WEBB WIRE WEARS WELL

WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.

8,000 SOFT MUD BRICK PER HOUR

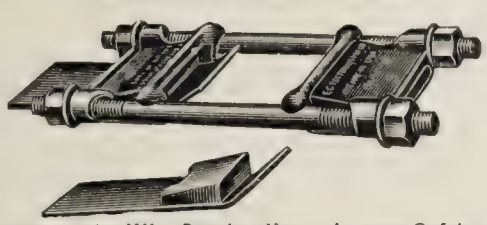
is the guaranteed capacity of our brick machine with automatic mold dumper combined.

¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction. Insures Safety to Kiln Contents.

WROUGHT IRON BANDS

Wall and Crown Guides
Crown Covers and Ventilators

Write for
Discount and Net Prices

E. C. Tecktonius Mfg. Co.
Racine Junction, Wis., U. S. A.

Tecktonius-Vogt
Up-and-Down Draft
Round Kiln



THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

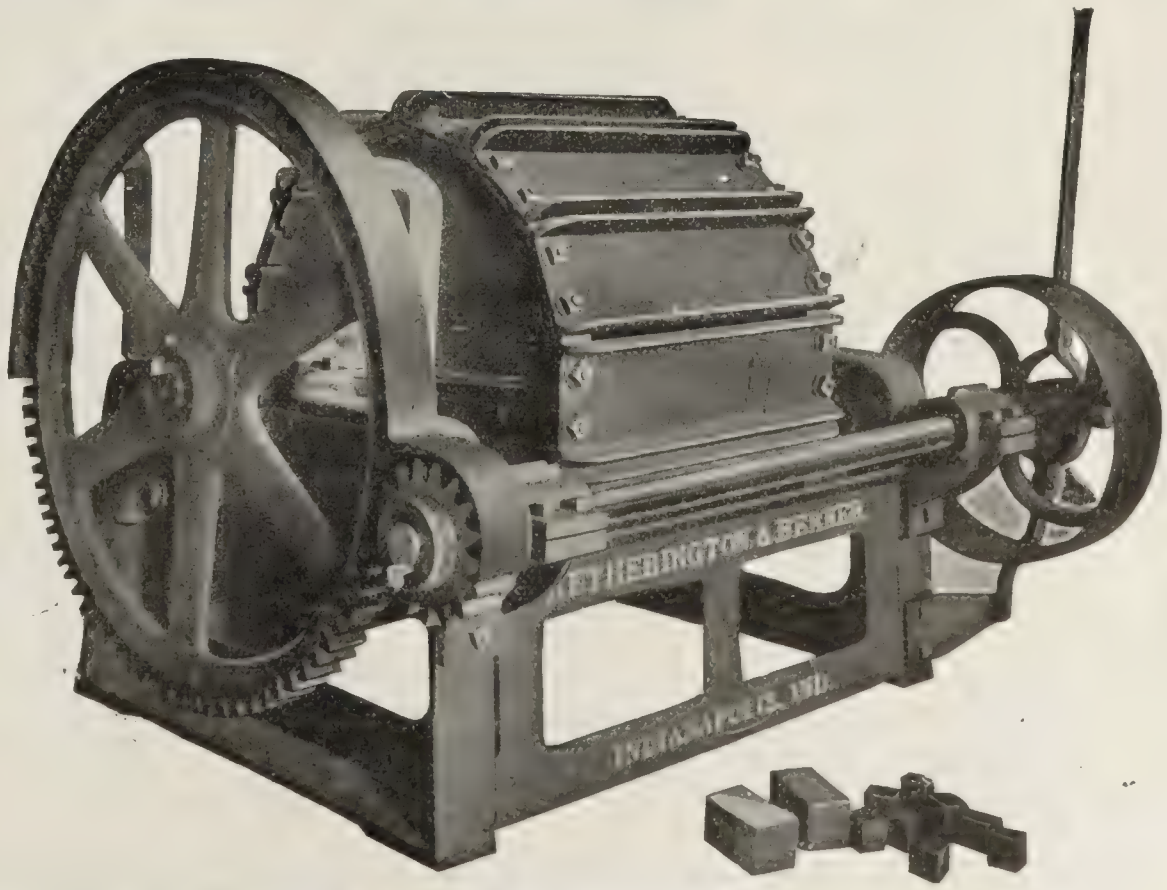
LATEST IMPROVEMENTS

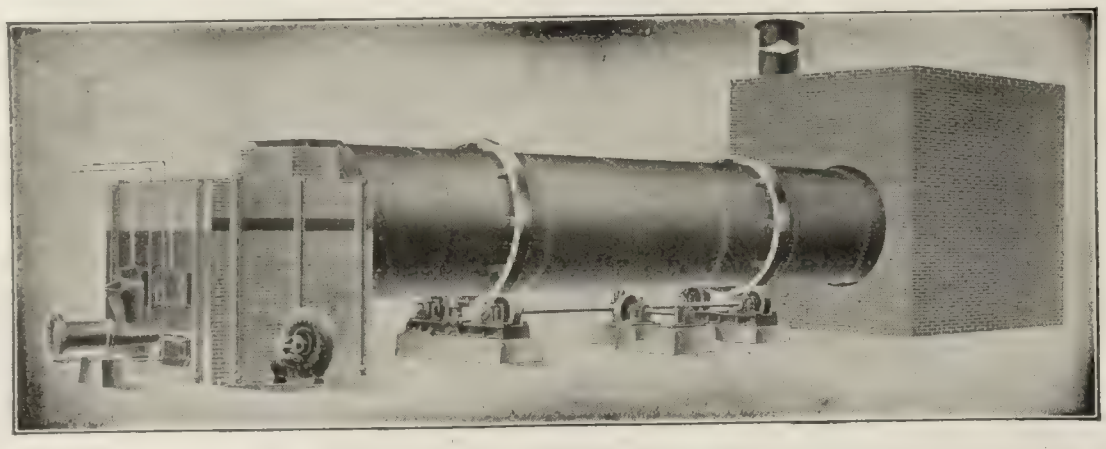
and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

For descriptive circular and prices address

HETHERINGTON & BERNER

INDIANAPOLIS, INDIANA





ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY
WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO
ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street
NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

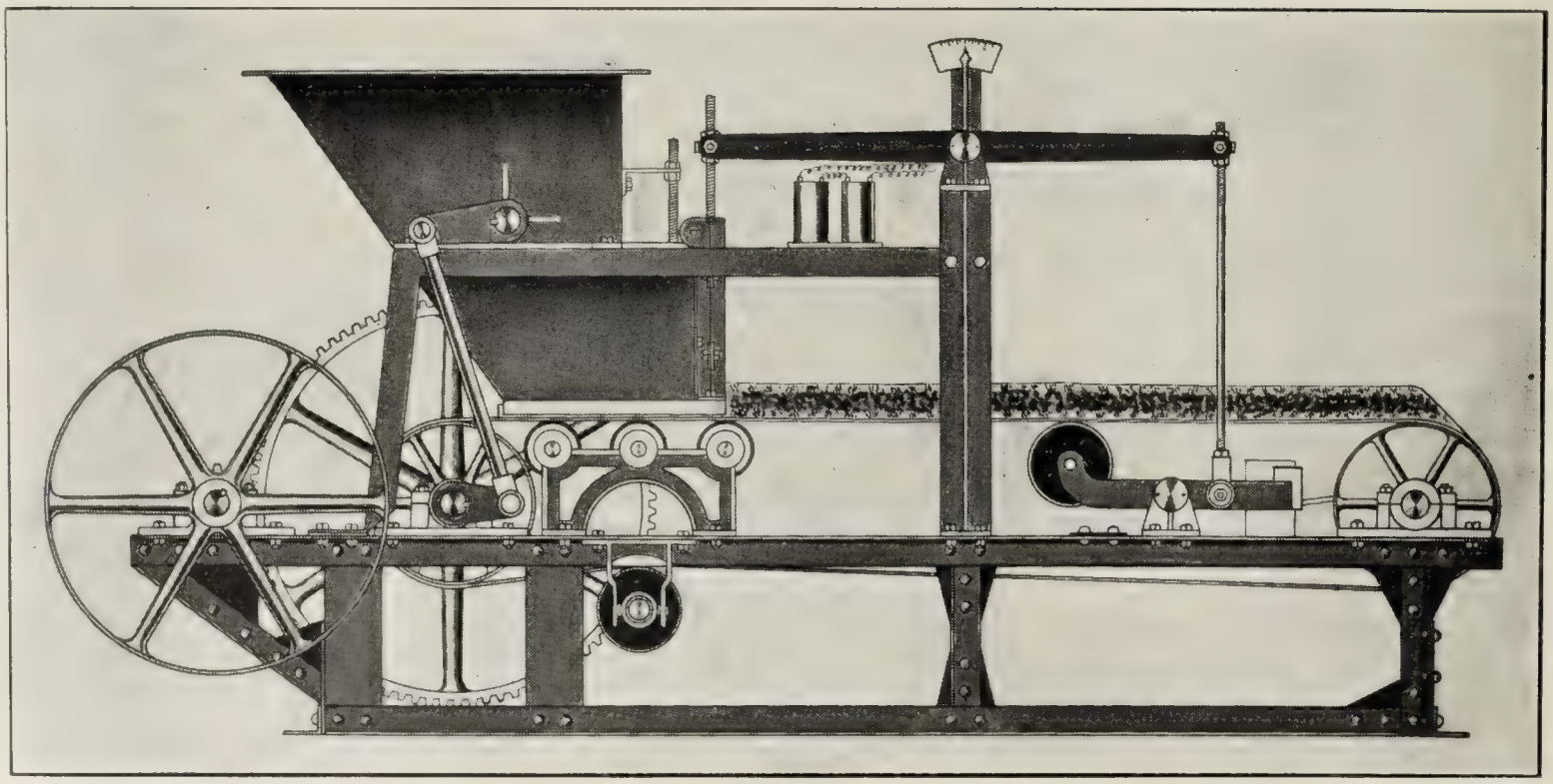
No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

SCHAFFER POIDOMETERS IMPROVE PRODUCT AND SAVE MONEY



They unite any number of different materials in correct proportions and deliver them at the rate of a pre-determined number of pounds per minute.

Deliver the water in a pre-determined number of pints per minute.

Automatically temper the clay more uniformly than can be done by human efforts.

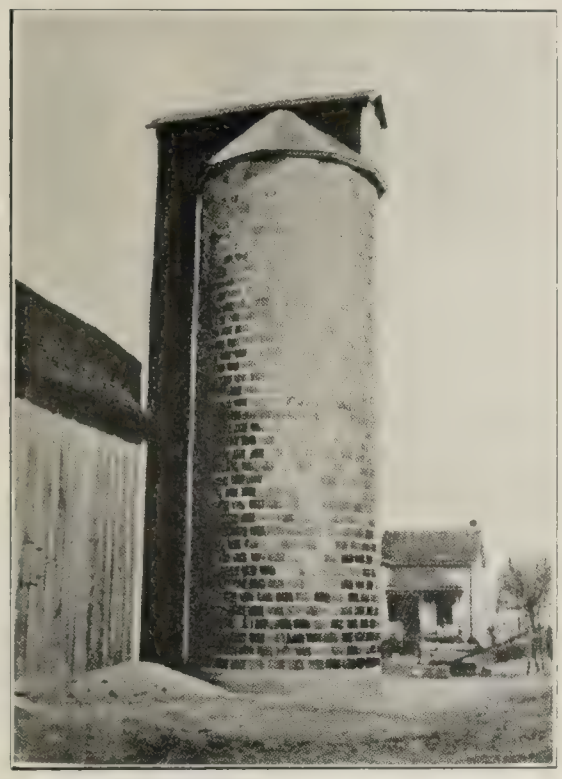
Cause the column of clay to flow from the machine more uniformly and with an even density.

Write for full information.

THE SCHAFFER ENGINEERING & EQUIPMENT COMPANY, TIFFIN, OHIO

There's Big Money in Silo Blocks

If You Make the Right Kind



We know the

DURO Everlasting Clay Block Silo

makes the most durable construction because we have erected scores of them in our own territory where they have driven out practically every other type of silo.

Our construction is simple, blocks are easy to make and erect, and the silo becomes such a solid piece of masonry that it is practically **everlasting** and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.



Note the Vertical Rod In Door Frame.

Mowrystown Brick & Tile Co.
Mowrystown, Ohio

Get Rid of that Old Machinery!

It is idle capital where it stands and the longer it lays there, the less valuable it becomes.

Turn it into real money, while the turning is good. Write up that little ad TODAY and tell us to put it in our classified columns NEXT ISSUE.

Brick and Clay Record **Chicago**

"A Man With a Message"
For the Brickman

By this title was Floyd E. Waite heralded after his address at the joint convention of Face Brick Manufacturers and Dealers, held at French Lick, Dec. 8th, 9th and 10th.

Mr. Waite did not appear to the Clay-workers as a "wrecker," but as a "Builder." His talk was constructive.

Not only were the weaknesses and the mistakes in the business of promoting fire resisting materials pointed out—a remedy was offered. And it is a perfectly practical, within-your-reach remedy, too.

A printed copy of this address FREE if you write for it. Read this vital message. It's YOUR business.

Society Advocating Fire Elimination

R. P. STODDARD, *Secretary*

340 Leader-News Bldg. CLEVELAND, OHIO

THE NATIONAL EXHAUST STEAM DRIER

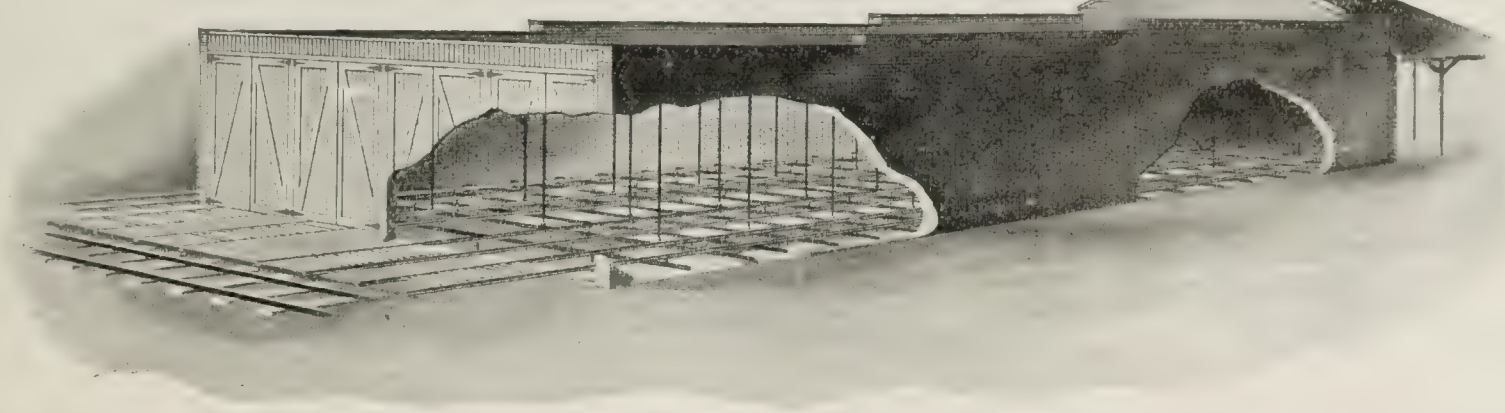
¶ Because—before we sell you a drier we will study your requirements—your clay—your conditions. Then we'll design a drier for you that will enable you to turn out the highest quality of brick obtainable from your clay, and at the lowest possible cost.

¶ This is NATIONAL service—it costs nothing extra but it has made scores of satisfied customers, any one of whom will tell you why they would buy another NATIONAL if they had it to do over again.

¶ Let us send you the names of some of these—write them and let them tell you of their experiences.

¶ Write us today—a postal will do. Also tell us of your needs so we can help you solve your drier problems.

Will Increase Your Profits



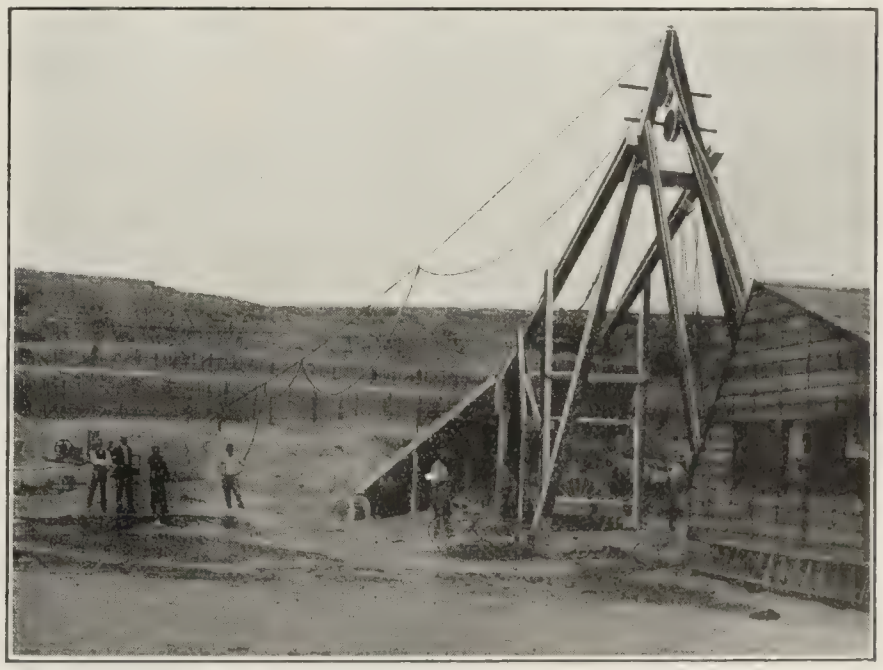
The National Dry Kiln Co., 1118 East Maryland St., Indianapolis, Ind.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



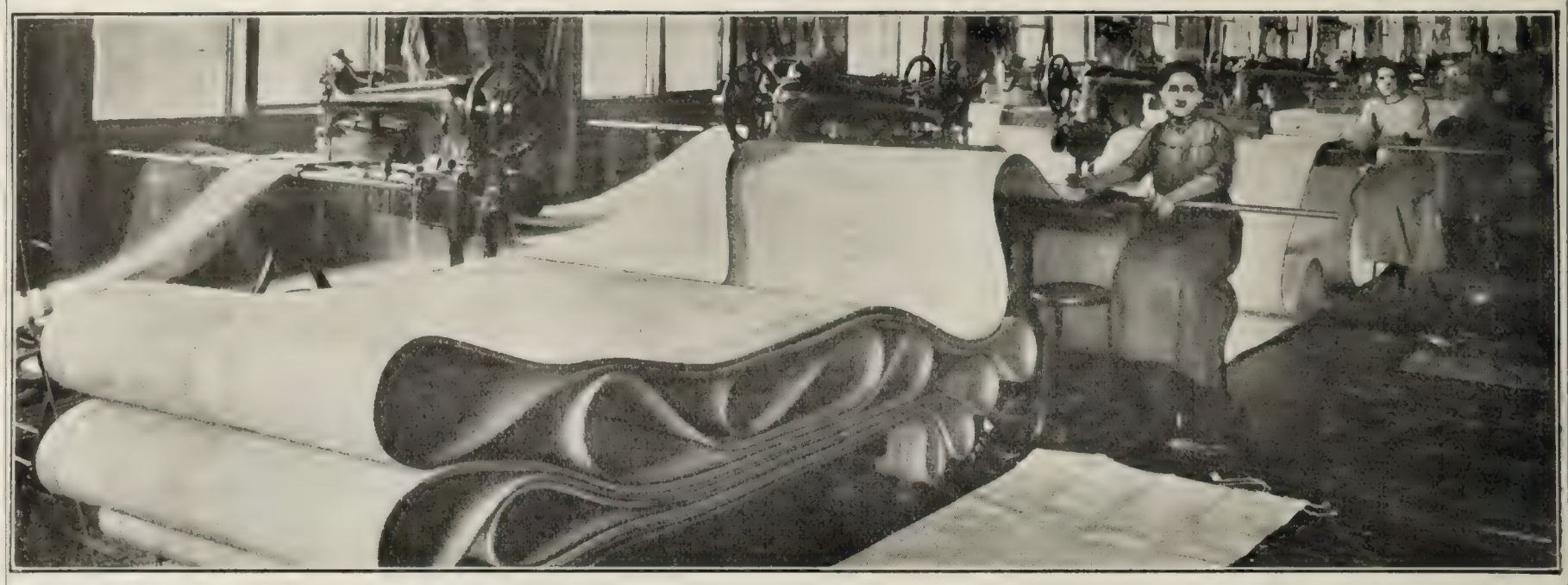
This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.

The Crowding Motion And The Full Circle Swing

Are Distinctive Features of **Thew Automatic Shovels** Enabling them to handle either shallow or deep cuts successfully and economically and furnishing a prying motion that is particularly effective in shales and fireclay.

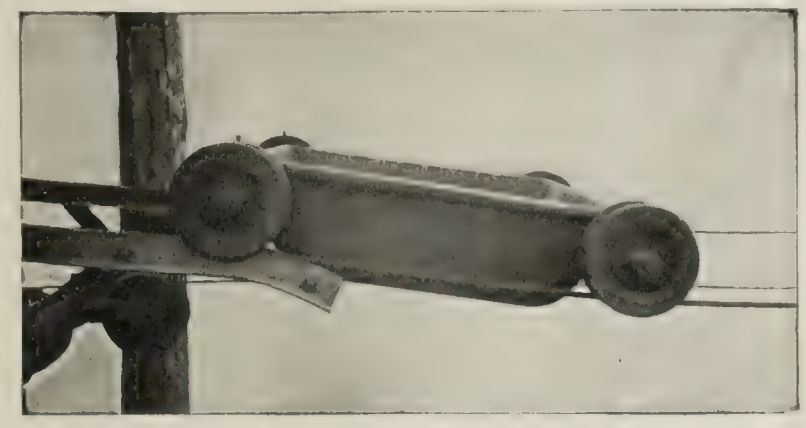


Are Cost-Saving Features That Make **Thew Automatic Shovels** The standard for brick yards. **300 Brick Manufacturers** are now using Thew Shovels and will gladly tell you what they are saving with their Thews. Write for Catalogue A and list of Thew Owners near you.

The Thew Automatic Shovel Co., Lorain, Ohio

Here Is The Point

The advent of the simplified type known as the LAWSON TRAMWAY puts the whole subject of Short-Haul Transportation on a new basis. The Aerial Tramway has hitherto been strictly an emergency apparatus, to be resorted to when all other reasonable means of transportation fail. The standard or narrow gauge road, traction engines, motor trucks, etc., were first figured on as the preferred plan. But if on account of severe grades, sharp curves, deep canons, river crossings, etc., none of these were feasible, then, as a last resort, the Aerial Tramway was called in;—and performed its service well, as a rule. Nevertheless, its high initial cost, its endless and heavy upkeep, and its lack of general flexibility to adapt itself to the best route have always stood in the way of its broader application.



WHAT WE DO IT WITH

Now comes the Lawson Tramway into court. It is no longer "aerial" at all except in the most limited sense of the term. It sticks close to earth at a general height of 10 feet to the top rail except in crossing local depressions. Curves present no obstacles. Its cost delivered and erected is far lower than any other tramway. It is built in short sections and hence can be extended or shifted in location at will. *Above all, its cost of maintenance is a mere fraction of that of any other tramway.* In short it is as sensible and simple as a cart,—which in fact, it is substantially.

It is our purpose to press home these facts until they are thoroughly understood. The Lawson Tramway will then be not the *last* but the *first* resort as the solution of the Short-Haul Problem. Where railroad service ends, the Lawson service begins. It even replaces the mule.

The various engineering problems presented are of the most stimulating character. In application no two tramways are alike. Our clients may be assured that Lawson Tramways are not "built by the mile and sawed off to order," but each case receives the closest engineering study, with the interest of our client always paramount to every other consideration.

Very respectfully,

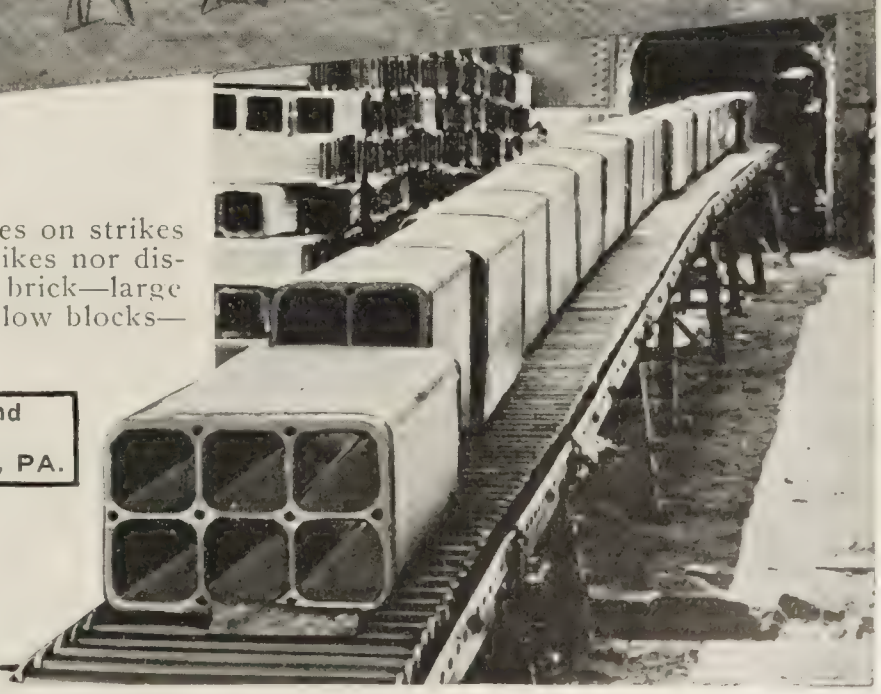
AMBURSEN COMPANY, Tramway Department **61 Broadway, NEW YORK**

In Foul Weather or Fair the Mathews

Gravity Brick Conveyer
Is always on the job



It never tires—never shirks—never complains—never goes on strikes—never lays off—always on hand after pay day. It has no likes nor dislikes—will handle rough common brick or smooth face brick—large building units or round drain tile—heavy paving brick or hollow blocks—anything that will run on ball-bearing rollers.

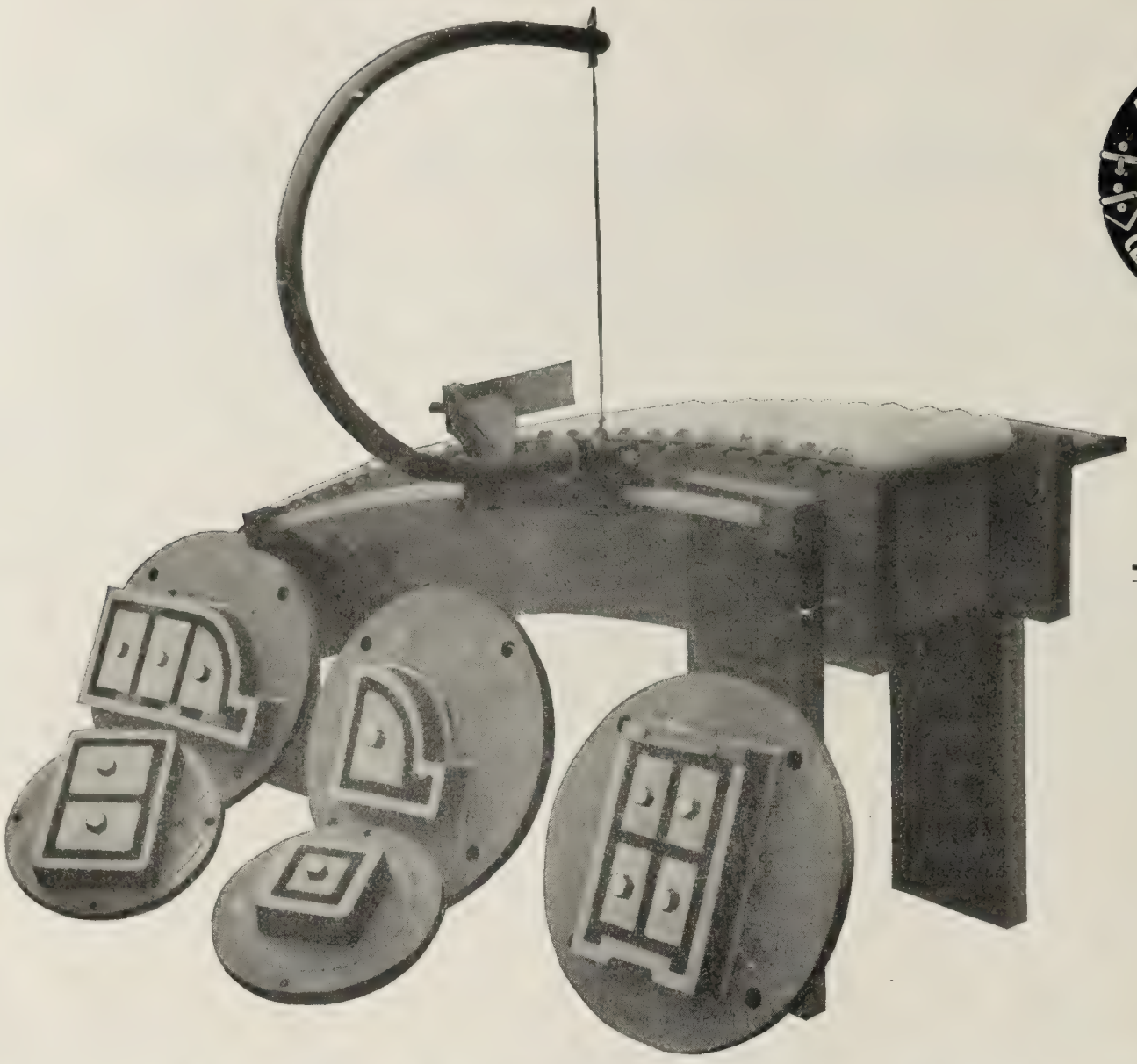


SPEED-THE MATHEWS WAY-ECONOMY THE SAVING WAY
MATHEWS GRAVITY CARRIER COMPANY

Main Office and Factory:
ELLWOOD CITY, PA.

Branch Factories:
TORONTO, ONT.
LONDON, ENG.

Know the ARBUCKLE First



The Arbuckle Radial Top Silo Block Cutter

THIS machine is designed for cutting Silo Blocks in plants where a simple, efficient and moderate-priced cutter is required. It is particularly adapted to clays which will not stand the "bending and forming" method of cutting blocks of some cutters, by having the column run out onto a belt having alternate concave and convex platens with a roller on top which presses or bends the column to radius.

In a great many clays this method is wrong, owing to the fact that, in drying and burning the blocks will straighten out again. With *The Arbuckle* the column is made to leave the die in *curved* form by die adjustment, it runs out on the table, which has a top curved to proper radius. The column is correctly formed and cut, without subjecting it to any stretching, bending or distortion of any kind. These blocks dry and burn to proper shape.

The table can be built to cut any radius. Also to suit any height of die. Blocks may be cut *varying lengths* by the adjustment allowed on stop. The rollers and their pins are turned together in lathe centers, insuring freedom from eccentricity. A covering of felt or flannel is neatly applied to rollers.

ARBUCKLE AND COMPANY

RUSHVILLE, INDIANA, U. S. A.

Another Well Known Plant Uses

Brown Pyrometers



View of a few of the 30 kilns.



Indicating Instrument for Burner.

The Terre Haute Vitrified Brick Co., Terre Haute, Ind., Mr. J. M. Hoskins, Vice-President, has a Brown Pyrometer equipment installed on 30 kilns. An indicating instrument is located in the burner house and a recording instrument in the office.

There is no man who knows the paving brick business better than Mr. J. M. Hoskins, and a recent letter from him, telling how both his plant, and his head burner have been benefited by this installation, would interest you. We should be glad to send you a copy of this letter. Also photographs of Brown Pyrometer installations at well known plants. They are sent for the asking.

THE BROWN INSTRUMENT CO.

ESTABLISHED 1860

PHILADELPHIA, PA.

NEW YORK PITTSBURGH CHICAGO

Distribute a Few Copies of This Bungalow Book Among the Prospective Home Builders in Your Community and Watch Your Sales Increase

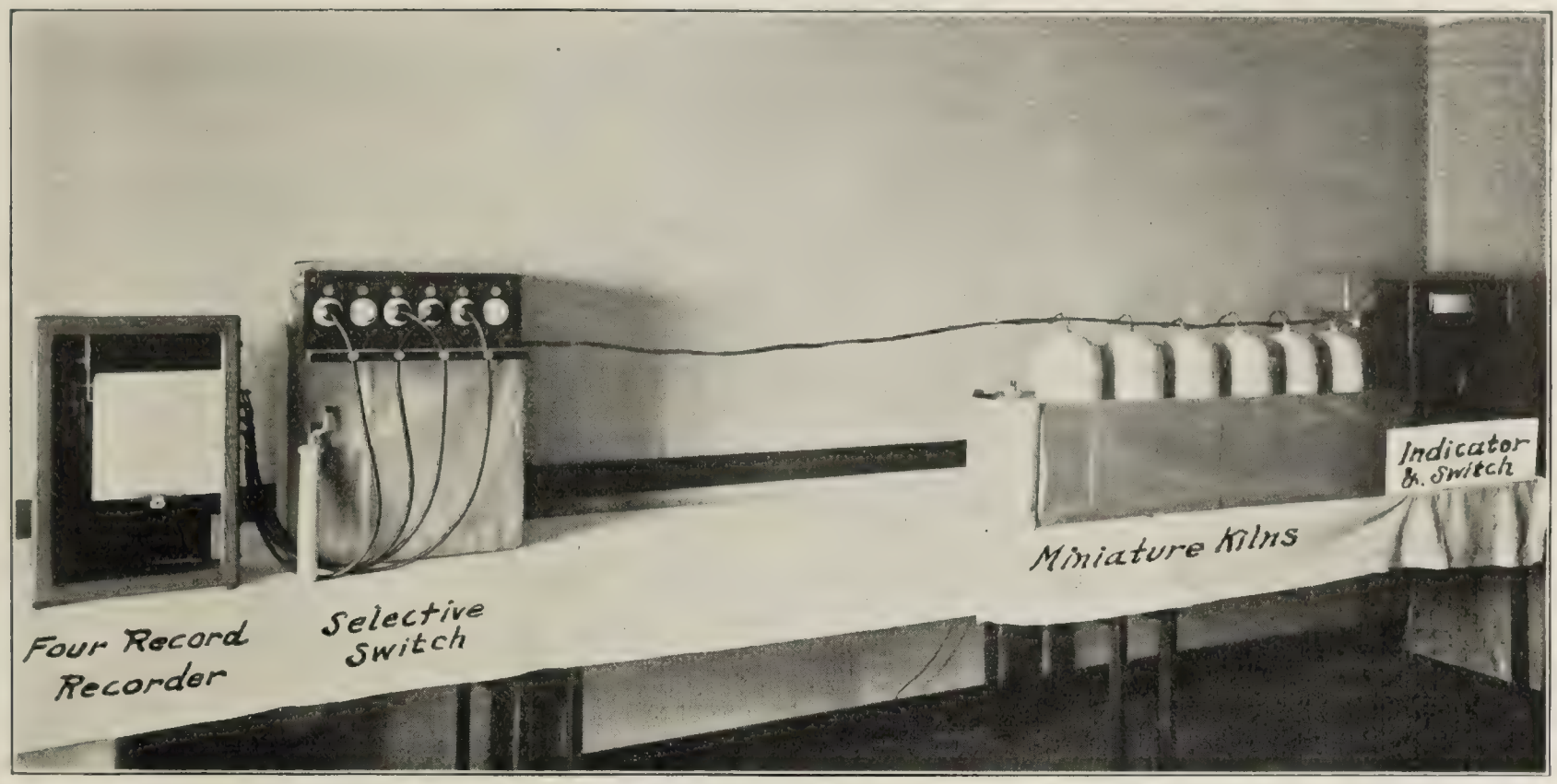
Help them decide on the style of house they want, by showing them the many beautiful designs contained in the Bungalow Book. They will make your prospective customers appreciate the fact that an attractive and substantial brick home can be built at a reasonable cost.



Price, 50 cents, postpaid

Brick and Clay Record

445 Plymouth Court, Chicago, Ill.



Did you see our exhibit at the Detroit meeting? We didn't show all we have, but we did show something good—a single

Thwing Multiple Recorder

recording the heat of four kilns at once.

Thos. C. Moulding saw it and brought Supt. J. D. Martin to see it. They both knew a good thing when they saw it and ordered a 20-kiln equipment for Straitsville and a 12-kiln equipment for Buckeye.

A lot of other people are going to buy, too. It will cost but a stamp to write and ask for an estimate on the cost of equipping your plant. If you knew how low the cost is and how much good it will do you, you would not delay.

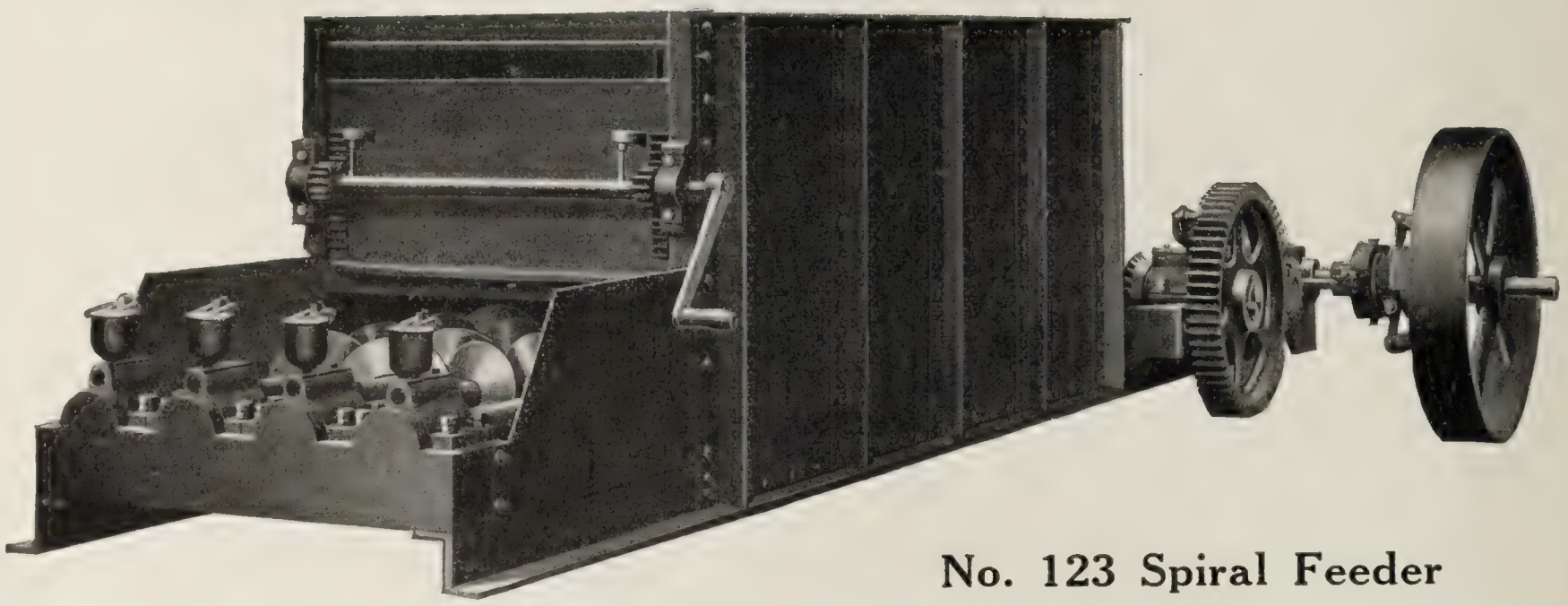
Write today.

THWING INSTRUMENT CO.

437 N. 5th Street, Philadelphia, Pa.

IF MARKED **BREWER** *IT'S GOOD*

Compare the specifications of this Spiral Feeder with those of any other and you will quickly see why it is better. Take these items for example. Weight, 5,700 lbs. Spiral shafts 3 in. dia. Intermediate shaft 3 in. dia. Pulley shaft 2½ in. dia. Compare weights and specifications when you compare prices.



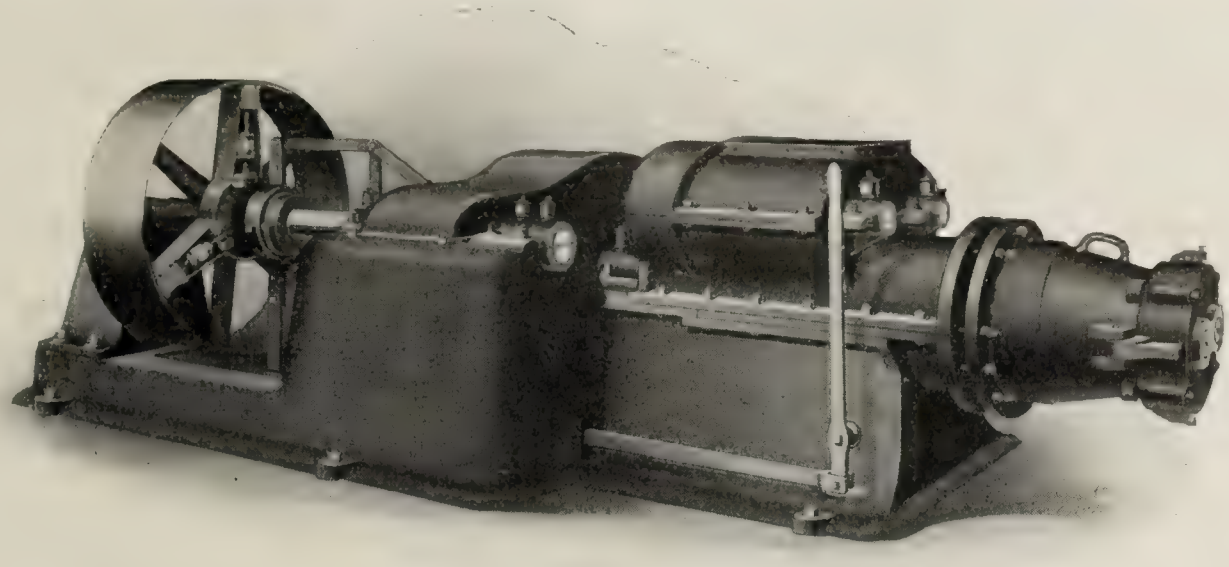
No. 123 Spiral Feeder

All Brewer Machines are rigid and heavy. Sometimes they may *seem* higher in price, but if you will look into their construction you will easily see that they represent *greater value* for the price than any other line.

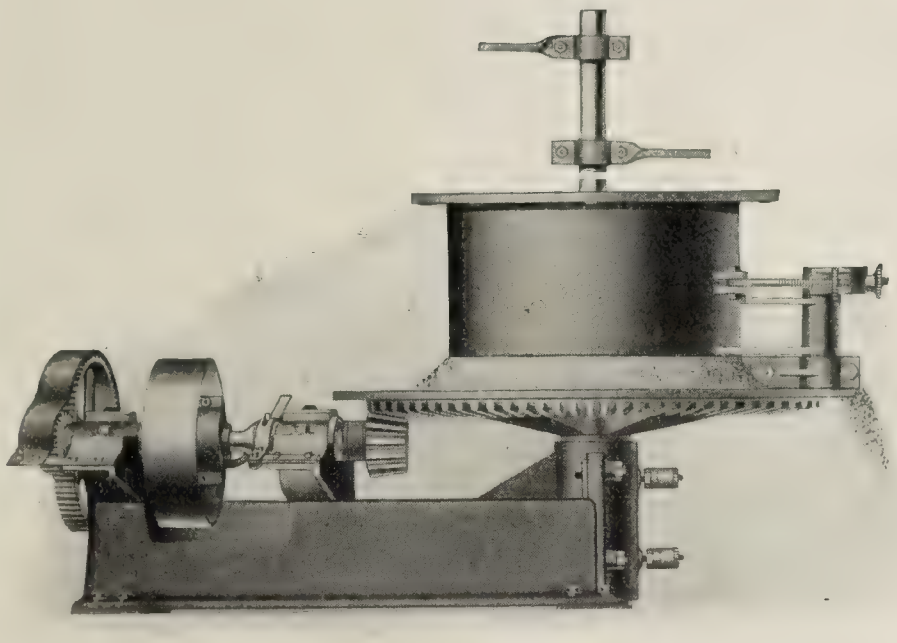
Ask For Catalog

H. BREWER & COMPANY

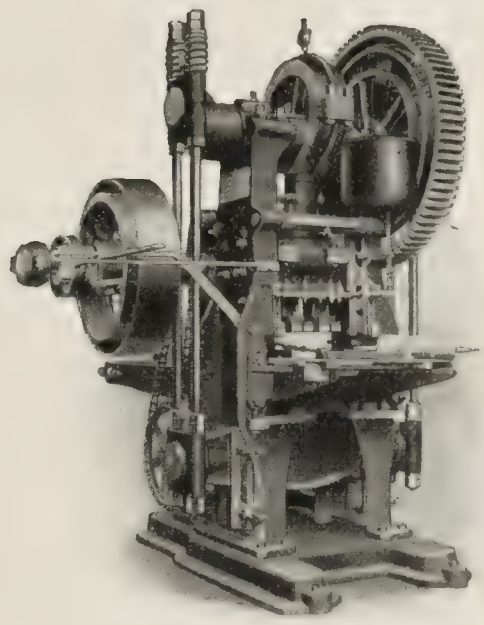
Tecumseh, Michigan



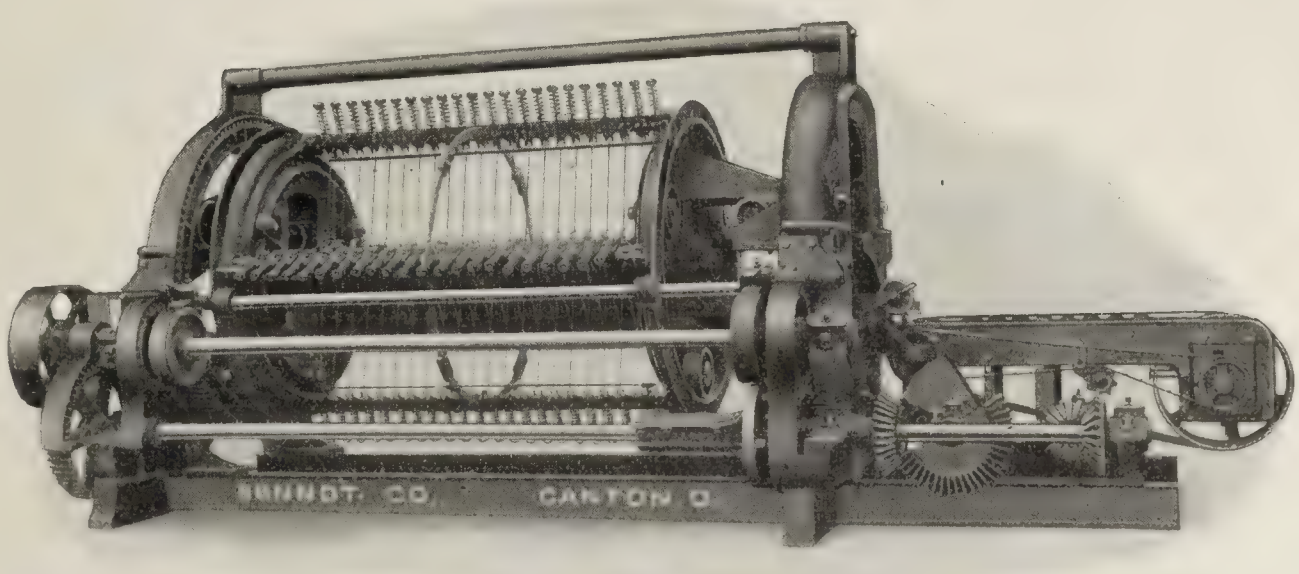
NO. 17 HOLLOW-WARE MACHINE, capacity 100-125 tons per day.



CLAY FEEDER



BONNOT REPRESS



ROTARY AUTOMATIC CUTTING TABLE

THE BONNOT COMPANY

CANTON, OHIO

909 N. Y. Life Bldg.
KANSAS CITY, MO.

211 Higgins Bldg.
LOS ANGELES, CAL.

Mr. Paving Brick Manufacturer!

Have you ever used any of these reprints from "Brick & Clay Record?"

"The Truth About the Concrete Roads of Wayne Co."

October 7th, 1913, issue

A 16-page folder, 9x12, in which Paul E. Green, M. E., tells the story of his complete investigation for the taxpayers of Highland Park, Ill., by whom he was sent to get the truth. Profusely illustrated. $2.50 per 100; $12.00 per 500; $20.00 per 1,000.

"Creosoted Block a Failure"

November 4th, 1913, issue

Chicago's experience with wood block graphically told in pictures and type in the form of a 4-page insert at $2.00 per 100; $5.00 per 500; $8.50 per 1,000.

"Chicago Concrete Streets a Failure"

March 7th, 1914, issue

A similar story of Chicago's experience with concrete instead of wood block as above, in the same form and at the same price. A valuable piece of literature in concrete road competition.

"Gov. Glynn (N. Y.) Urges Use of Brick Roads"

April 7th, 1914, issue

An 8-page folder in which Gov. Glynn, of New York, not only gives his views on the exclusive use of brick for the highways of New York, but backs them up with indisputable facts. $4.00 per 100; $15.00 per 500; $20.00 per 1,000.

Look up these stories in the issues in which they appeared.

Following the title of each story, the issue in which it appeared is given. If you will refer to these issues you will quickly see the value of them in reprint form as quoted above for local use in "turning the tide" in favor of brick.

Brick and Clay Record

445 Plymouth Court
Chicago, Ill.

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Keim Brick & Tile Co.	Louisville	Ohio
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc. ..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co. ..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis ..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co. ..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S. ..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis ..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co. ..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co. ..... Uhrichsville ..... Ohio.
Federal Clay Products Co. ..... Mineral City ..... Ohio

ROOFING TILE
National Roofing Tile Co. ..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co. ..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co. ..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co. ..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co. ..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co. St. Louis ..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co. ..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co. ..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co. ..... St. Louis ..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co. ..... St. Louis ..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co. ..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin ..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin ..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co. ..... E. Liverpool ..... Ohio.
United States Roofing Tile Co. ..... Parkersburg ..... W. Va.

WALL COPING
Cannelton Sewer Pipe Co. ..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis ..... Mo.

DEALERS
Hood Brick Co., B. Mifflin ..... Atlanta ..... Ga.
Bonner & Marshall Brick Co. ..... Chicago ..... Ill.
Kimbell Brick Co., S. S. ..... Chicago ..... Ill.
Thomas Moulding Brick Co. ..... Chicago ..... Ill.
Fiske & Company, Inc. ..... New York ..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester ..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O. 4
Keller Brick Co., The, Cuyahoga Falls, O. 13

BRICK (COMMON)
Alliance Brick Co., Alliance, O. 15
Alliance Clay Pro. Co., Alliance, O. 8
Alton Brick Co., Alton Ill. 11
Keller Brick Co., The, Cuyahoga Falls, O. 13
Metropolitan Paving Brick Co., Canton, O. 10

BRICK (FACE)
Alliance Brick Co., Alliance, O. 15
Alliance Clay Pro. Co., Alliance, O. 8
American Enamel Brick & Tile Co., New York, N.Y. 13
Bradford Pressed Brick Co., Bradford, Pa. 15
Gethmann Brick Co., Gladbrook, Ia. 13
Hocking Valley Pro. Co., Columbus, O. 11
Hydraulic Press Brick Co., St. Louis, Mo. 13
Ironclay Brick Co., Columbus, O. 12
Keim Brick & Tile Co., Louisville, O. 15
Keller Brick Co., The, Cuyahoga Falls, O. 13
Kimbell Brick Co., S. S., Chicago, Ill. 13
McArthur Brick Co., McArthur, O. 12
Stark Brick Co., Canton, O. 12

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill. 6
Brighton Fire Brick Co., New Brighton, Pa. 6
Chicago Retort & Fire Brick Co., Chicago, Ill. 4
Davis Fire Brick Co., Oak Hill, O. 4
Dover Fire Brick Co., Cleveland, O. 4
Evans Clay Mfg. Co., Uhrichsville, O. 4
Federal Clay Pro. Co., Mineral City, O. 6
Maurer & Son, H., New York City. 4
Mexico Brick & Fire Clay Co., Mexico Mo. 6
Queens Run Fire Brick Co., Lock Haven, Pa. 4
Jos. Soisson Fire Brick Co., Bolivar, Pa. 4
Southern Fire Brick & Clay Co., Chicago. 6
St. Louis Vit. & Fire Brick Co., St. Louis, Mo. 6

BRICK OR BLOCK (PAVING)
Albion Shale Bk. Co., Albion, Ill. 8
Alliance Clay Pro. Co., Alliance, O. 8
Alton Brick Co., Alton, Ill. 11
Barr Clay Co., Streator, Ill. 11
Bessemer Limestone Co., Youngstown, O. 8
Big Four Clay Co., Canton, O. 8
Carlyle Paving Brick Co., Portsmouth, O. 10
Clinton Paving Bk. Co., Clinton, Ind. 8
Danville Brick Co., Danville, Ill. 10
Deckman-Duty Brick Co., Cleveland, O. 8
Hamburg Vit. Brick Co., Philadelphia, Pa. 10
Harris Brick Co., Cincinnati, O. 8
Hocking Valley Brick Co., Columbus O. 10
Mayer Brick Co., C. P., Bridgeport, Pa. 10
Metropolitan Paving Brick Co., Canton, O. 10
Murphysboro Paving Brick Co., Murphysboro, Ill. 11
Nelsonville Brick Co., Nelsonville, O. 8
Purington Paving Brick Co., Galesburg, Ill. 10
Shawmut Paving Brick Co., Shawmut Pa. 10
Sterling Brick Co., Olean, N. Y. 6
Terre Haute Vit. Brick Co., Terre Haute, Ind. 11
United Brick Co., Conneaut, O. 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa. 6

DEALERS
American Clay & Cement Corp., Rochester, N. Y. 13
Bonner & Marshall Brick Co., Chicago, Ill. 15
Kimbell Brick Co., S. S., Chicago, Ill. 13
Globe Brick Co., East Liverpool, O. 12

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O. 10

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill. 13

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa. 6
Davis Fire Brick Co., Oak Hill, O. 4
Evans Clay Mfg. Co., Uhrichsville, O. 4
Federal Clay Pro. Co., Mineral City, O. 6

SALT GLAZED BRICK
Stark Brick Co., Canton, O. 12

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O. 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O. 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 15
United States Roofing Tile Co., Parkersburg, W. Va. 15

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 15
United States Roofing Tile Co., Parkersburg, W. Va. 15

TILE (ROOFING)
National Roofing Tile Co., Lima, O. 15
United States Roofing Tile Co., Parkersburg, W. Va. 15

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, Connellsville, Pa. *Sales Office,* Bolivar, Pa.

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press Bk. Co., St. Louis, Mo.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Sarabrand—Hydraulic-Press Bk. Co., St. Louis, Mo.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

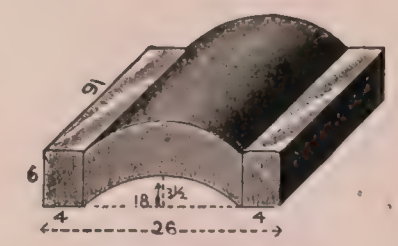
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better



BRICK HOUSES
And How to Build Them

This book is a complete and clear manual of brick construction, designs and details. It tells what every builder should know of the classification and measurements of brickwork, together with architect's drawings of framing for brick houses and the use of brick veneer.

Up-to-Date and Approved Methods

This book also tells of the miscellaneous uses of brick, including ornamental brick and tile work, chimney and flue construction, brick fireplaces, brick sewers, cisterns and flush tanks, etc. It tells the carpenter and builder everything he should know to undertake brickwork and how to make a success of every job in which brick is used. It is so clearly illustrated by details that there can be no uncertainty in any builder's mind as to each successive step to be taken.

Beautiful Designs Shown

Over sixty designs of the very best modern architectural work are presented in this book. These designs are of attractive, substantial, homelike brick houses of many types. Specifications and working drawings for one of these homes are given in Ideal Homes, August 4th issue of "Brick and Clay Record."

Price, Postpaid, - - - - - - - $1.00

BOOK DEPARTMENT
BRICK AND CLAY RECORD
CHICAGO

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory:
Zanesville, Ohio

Office:
St. Paul Bldg.
Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

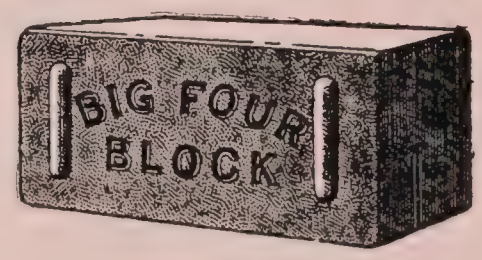
CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

A Uniform Block which makes an Ideal Pavement

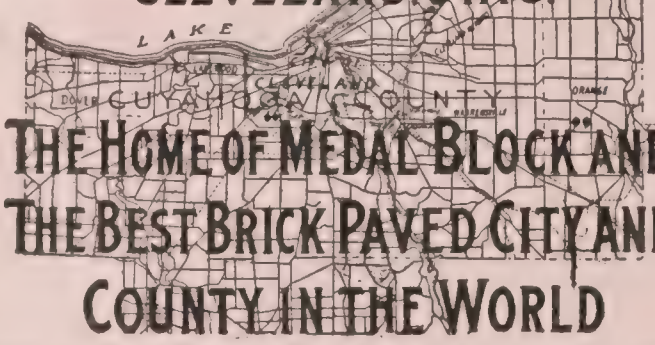


THE BIG FOUR CLAY CO.

City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO.

CLEVELAND OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.

Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick

Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick

Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick

Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost—see Prices Quoted in this Advertisement.

Build with Brick

Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

The Ironclay Brick

The Ironclay TRADE MARK FIRE-FLASHED BRICK VITREOUS SELF-CLEANING It washes its own face.

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick
BELDEN BRICK CO.-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

For sale by

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

L. D. BINYON, President
H. L. MATZ, Vice-President
JAS. A. HOGAN, Sec'y and Treas.

S S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

PAVING BRICK MANUFACTURERS

You will find the following circulars (reprints of articles appearing in "Brick and Clay Record") very helpful in fighting competitive materials.

The Truth about the Wayne County Roads (From October 7, 1913, issue)	100 500 1000	$ 2.50 12.00 20.00
Chicago Concrete Streets a Failure (From March 7, 1914, issue)	100 500 1000	$ 2.00 5.00 8.50
Governor Glynn Urges Use of Brick Roads (From April 7, 1914, issue)	100 500 1000	$ 4.00 15.00 20.00

BRICK AND CLAY RECORD, 445 Plymouth Court, Chicago

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

Official Directory of
Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—C. A. Millar, Pres., Toronto, Can.; Gordon C. Keith, Toronto, Can.

American Ceramic Society—C. W. Parmelee, B. S., Pres., New Brunswick, N. J.; Edward Orton, Jr., E. M., Sec'y, Columbus, Ohio.

American Face Brick Association—Harold W. Holmes, Pres., Detroit, Mich.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; Charles T. Harris, Sec., Cleveland, Ohio.

Illinois Clay Manufacturers' Association—J. L. Buckley, Pres., Aledo, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—Eben Rodgers, Pres., Alton, Ill.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—T. B. Martin, Pres., Minneapolis, Minn.; L. G. Rose, Sec'y-Treas., Minneapolis, Minn.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—P. C. G. Gosser, Pres., Coshocton, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, O.

Western Ontario Clayworkers' Association—Alfred Wehlan, Sec'y, Cario, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—A. W. Hilker, Racine, Wis.; Prof. Samuel Weidman, Vice-Pres. and Sec'y, Madison, Wis.

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: ***Louisville, O.***

Factory: ***Mapleton, O.***

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

The United States Roofing Tile Co.

ROOFING TILES

Promenade and Floor Tiles

Pure SHALE products of superior quality and patterns.

Two Factories—Prompt Deliveries

GENERAL OFFICE
PARKERSBURG - WEST VIRGINIA

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

POSTERETTES



The best, brightest, most attractive poster stamp that has so far been issued.

It carries the "Build with Brick" slogan everywhere your mail or express packages meet the eye of a prospective builder.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(***Exclusive distributors of the famous Oriental Brick***)

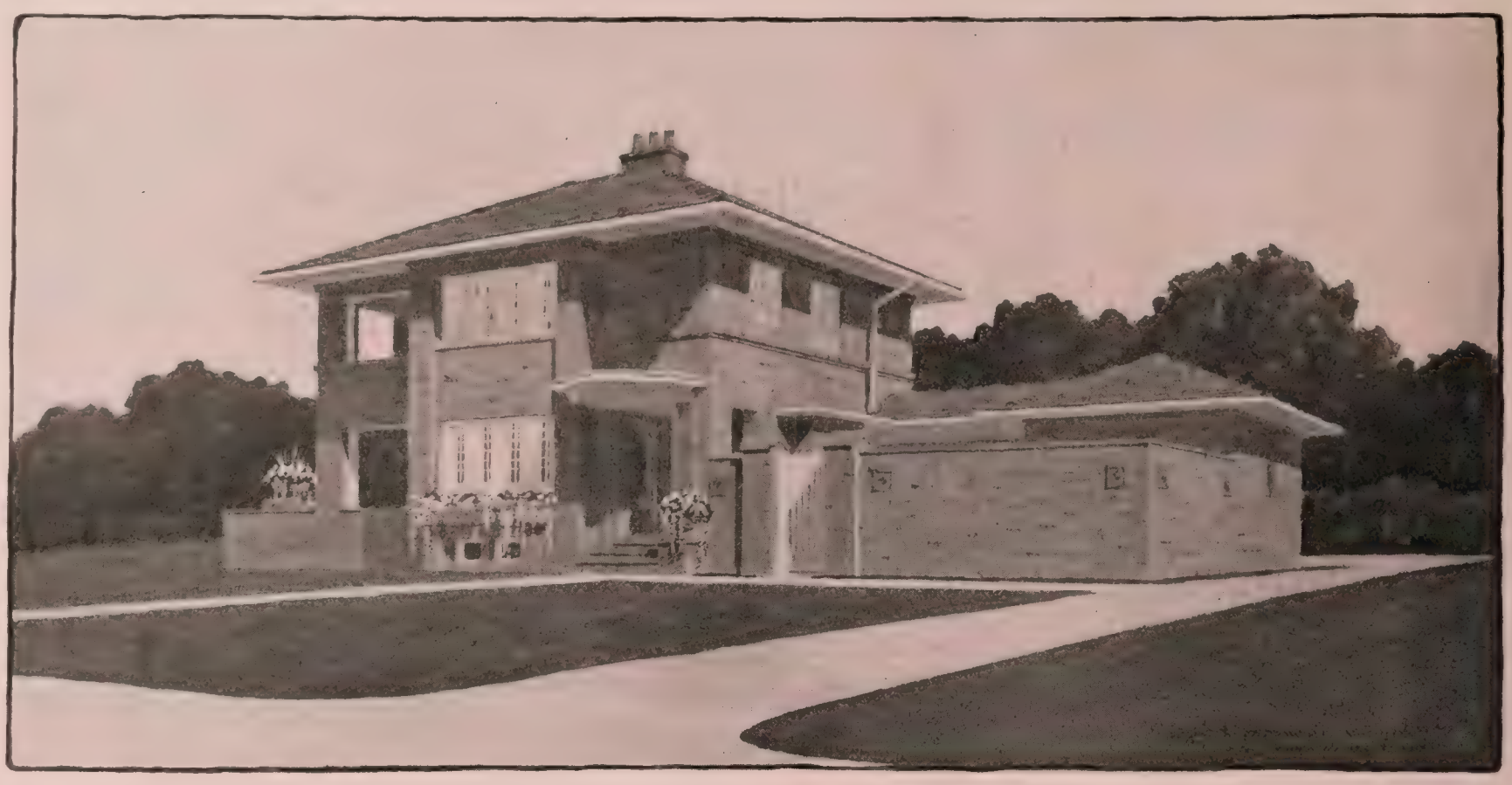
Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.



An Attractive Booklet

Telling about the house pictured above has been mailed to three thousand brick men

IF you have not received a copy or if you have mislaid the one that came to your office, write for another.

IT tells how the house came to be built, why it was built at the Panama-Pacific Exposition and what its being built means to the clayworking industry.

IT is the greatest publicity project ever launched by men interested in the increased use of building brick.

PLANS are being distributed in a score of cities and will be sent to twice as many more. Contractors will submit estimates that will be used as a basis for comparison as to the cost of brick residence construction in the principal cities and towns in the country.

FUNDS are needed for the upkeep of this house —not repairs, for it is a brick house, *and needs no repairs*. But the expense of showing it to fifteen million or more prospective home builders will be expensive.

You have, in this, an opportunity of putting your money into a common fund with other brickmakers, to demonstrate the low cost of permanent, fire-resistant residence construction.

Write, and make your checks payable to Charles Bonner, Treasurer, 1205 Chamber of Commerce, Chicago

Panama - Pacific Clay Products Association

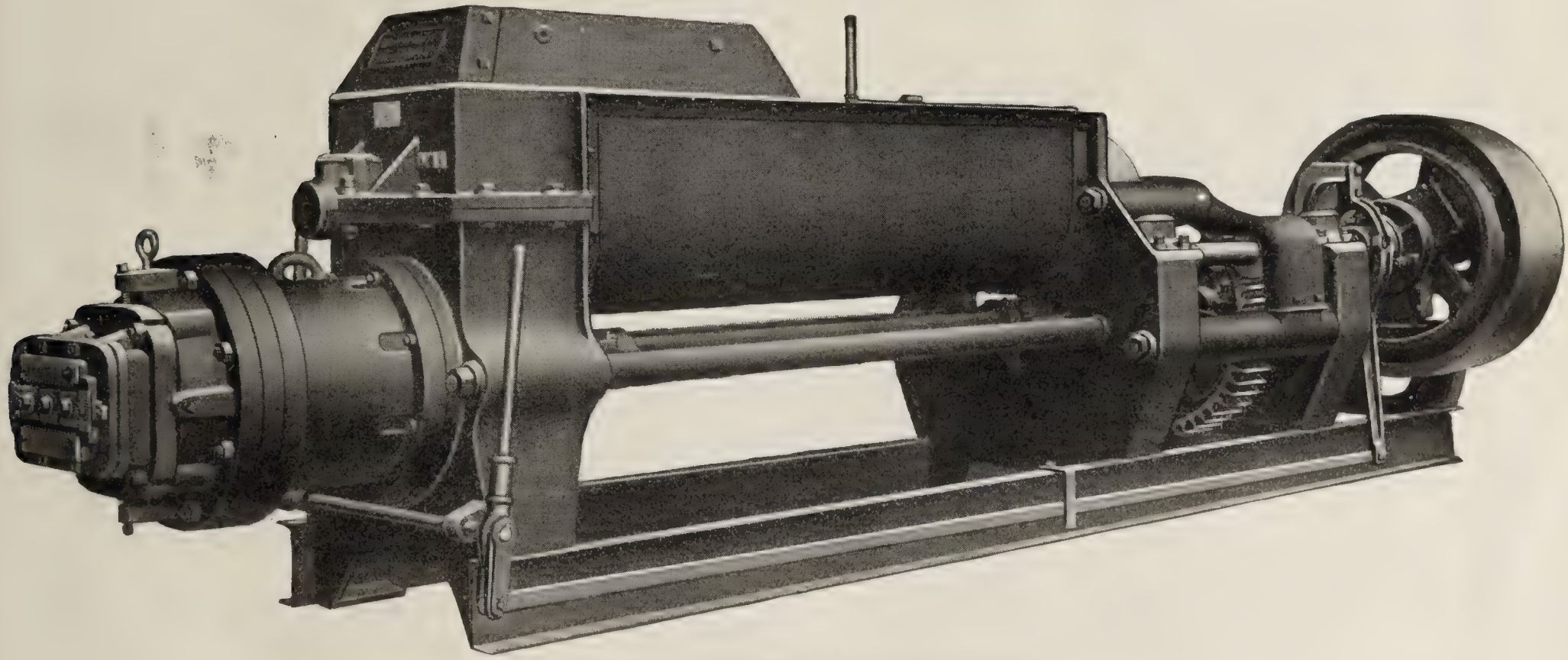
HERMAN L. MATZ, *President* CHARLES BONNER, *Treasurer*
WILLIAM P. VARNEY, *Vice-President*

BACK PRESSURE

Few clayworkers entering the hollow-ware field realize the unusually heavy back pressure caused by forcing clay around cores and core-bridges, and through comparatively small openings in the die. This backward thrust is placed directly upon the thrust bearing on the auger shaft—one of the most important points of a hollow-ware machine.

Each Freese hollow-ware machine is equipped with a specially designed renewable multiple-contact bearing, distributing the pressure over a large area, but at the same time having only about half the circumferential speed of a single contact bearing with the same area. The tendency of these bearings to heat under pressure is thus reduced to a minimum—a feature you will fully appreciate *after* you have entered the field.

The Freese system of slow-running gearing, and the positive forced feed obtainable with a machine of this design are two other features that mean much to the hollow-ware manufacturer.



UNION HOLLOW-WARE MACHINE

A complete line of automatic and hand power hollow-ware cutters.

E. M. FREESE & COMPANY

130 South Street GALION, OHIO

Dependable Machinery of Proven Efficiency

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

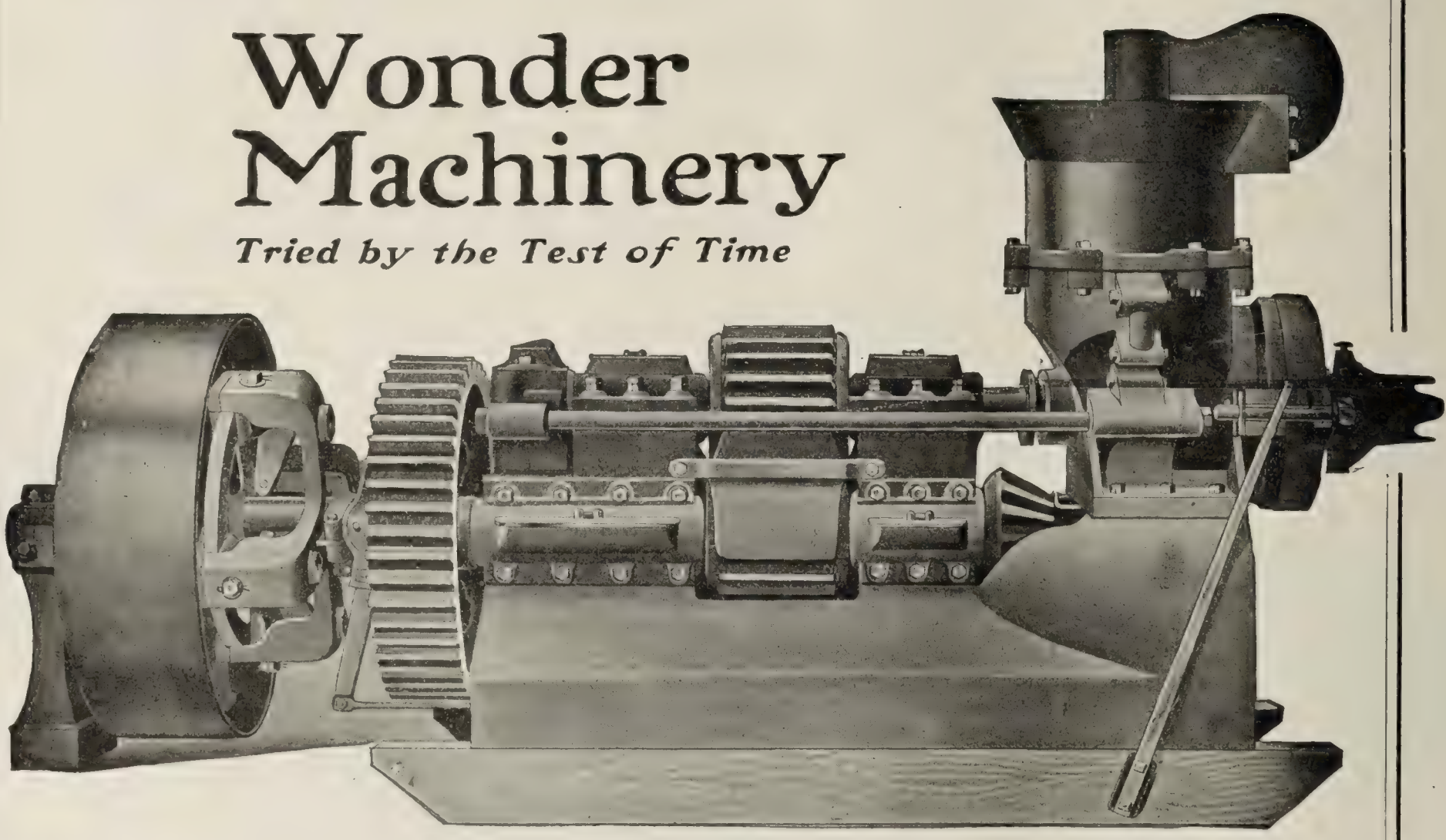
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



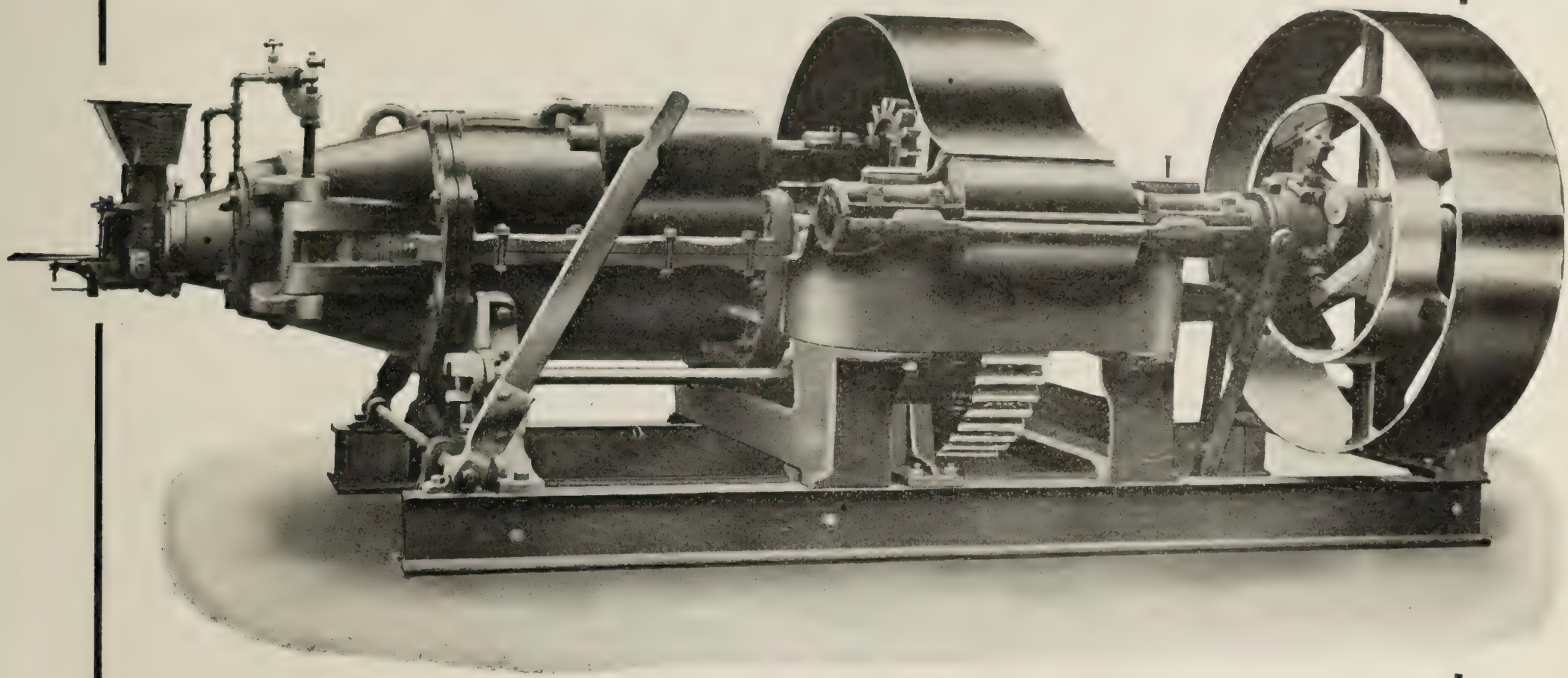
Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

Better Clay Ware



No. 4 BRICK MACHINE

You will notice in plants equipped with STEELE MACHINERY, large or small, very little noise. This means well balanced design; properly proportioned parts; good workmanship; hard, smooth wearing surfaces and minimum power.

Steele has from the first used direct gears, having main gear large to reduce strains.

Results: A smooth and easy output, instead of the strained effort often seen.

We invite your investigation.

J. C. STEELE & SONS

STATESVILLE, N. C.

There is No Exposed Gearing in the New Rust Special Clay Feeder

Every cog—every pinion is covered up. No dirt—no grime can get in to cut and wear the parts. Careless fingers and passing blouses cannot become entangled to cripple valuable employes and to pave the way for expensive damage suits.

Every Gear Runs in Oil

Lubricants prevent friction—and increase the efficiency of any machine, but the slightest particle of grit or grime undoes all the good the best lubricant can do. Each gear being housed and running in a well of oil, free from grit, insures perfect lubrication.

And Then—the Rust Saves the Labor of TWO Men

But the one great interest-compelling feature about the Rust Special is that it actually cuts out the labor of two men—Figure it yourself—see what this means to your profit box in a year.

If you pay $2.25 per day to your hand-feeders at the pug-mill, and if you require two men to do this work—and there are 300 working days in a year—and your plant runs a full year—doesn't that foot up a saving of $1,350?

The Rust, therefore, pays for itself before the first year is ended and every year you have a clear profit of 1,000 dollars.

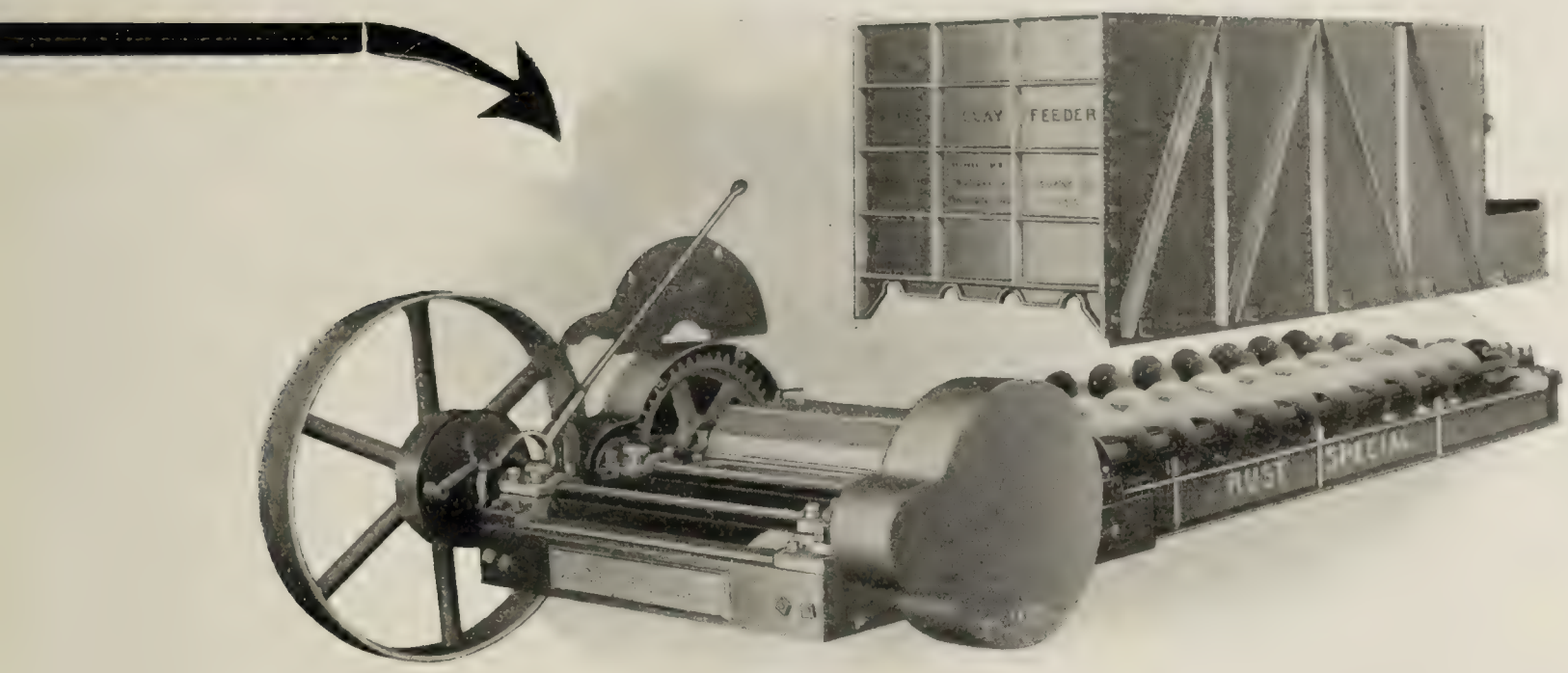
Besides, there is the even-tempering of your clay—and the regular feeding which speeds up your entire plant.

Send for FREE Book
Giving Facts and Figures

We have prepared a booklet that describes the Rust Clay Feeders—it gives all the information you will want to know about the Rust, and further produces **PROOF** of all our claims for clay-workers who have used the Rust.

P. O. BOX 395

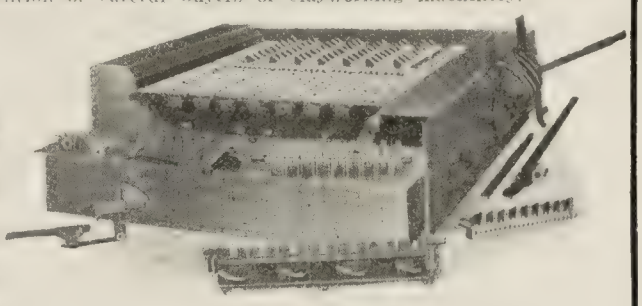
Marion Machine, Foundry & Supply Co., Marion, Ind.



Here are Four Other Money-Making MARION Products

While the Marion Machine, Foundry & Supply Co. has become identified to the clayworker largely through the wonderful success of the Rust Clay Feeders, the Marion Line of Products embraces a number of other machines and devices which merit the attention of careful buyers of clayworking machinery.

The "Shear-Klean" Grate

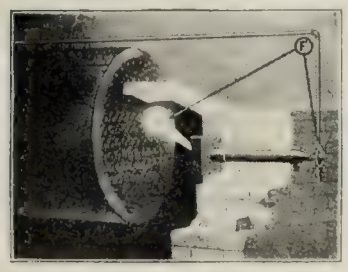


This grate is especially adapted for burning low-grade "clinkering" coal, especially slack or screenings—and it burns them so effectually that it makes them give a full day's run without cleaning through the fire doors.

Its working principle is such that the fireman can handle and control his fires without the use of slice bar or poker.

At plants using the Shear-Klean there is no inrush of cold air to chill the walls and firebed—interrupt the distillation of gases, and reduce the temperature of the furnace.

Open fire doors cause leaky flues producing smoke, waste heat, and lower steam pressure. The SHEAR-KLEAN prevents these wastes.



The Marion Rotary Soot Blower

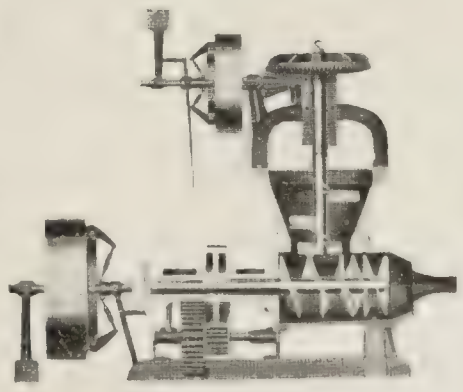
is a permanent fixture in the rear wall of the boiler opposite center of flue space, and by its use the life of a boiler is prolonged by keeping the soot from the tubes.

Soot, if permitted to remain on the tubes, precipitates acid, causing corrosion; and the accumulation of soot causes a great loss of fuel.

With the Marion Soot Blower the soot is blown in direction of the natural draft out through the chimney, cleaning the boiler while in commission, thereby avoiding strains which occur in old method of opening front of boiler, causing flues and seams to leak.

The Marion Brick and Tile Machines

There are six leaders in the Marion line of "Eli" Brick and Tile Machines—each designed to give the maximum of service at the minimum of cost. These come with the upright puggers and with the square hoppers. Their capacity runs from 12,000 brick or 5,000 to 8,000 three-inch tile to 100,000 brick per 10 hours.



The Marion Winding Drums

are all of the self-contained friction type. They are strongly made. One lever operates the friction pulley and the brake which keeps the car, loaded or unloaded, under perfect control of the operator.

We have booklets as listed below. Send for the one you want: Rust Special Clay Feeders, Shear-Klean Grates, Rotary Soot Blowers, Brick & Tile Machines, Winding Drums, Atlas Car Movers.

P. O. Box 395

Marion Machine, Foundry and Supply Co., Marion, Ind.



If it has to do with some plant problem, the answer will be prompt and, so far as we can make it, sensible, practical and authentic.

A corps of experts answers problems sent in by BRICK AND CLAY RECORD readers.

Use our Question and Answer Department and Save Costly Experimentation.

If your question has to do with Machinery or Equipment, write us one letter and save writing a dozen. We will forward your inquiry to the most reliable manufacturers.

Address: Service to Clayworkers Dept.

Brick and Clay Record

445 Plymouth Court, Chicago, U. S. A.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—Superintendent for sewer pipe plant, operating Western Canada. Must be adaptable, able to assume control and show results. Splendid opportunity for young man to grow with plant. In your application state fully why you know you can handle job. Address: Glazed, 827 Union Bank Bldg., Winnipeg, Canada.

WANTED—Man capable of taking charge of stocking and shipping of brick. Must be thoroughly acquainted with shading of both vitrified and dry-press brick. Wages: $100 per month. State age and give references. Address: 3-A, care of "Brick and Clay Record." 3-1.

WANTED — Experienced superintendent for sand-mold brick plant in Wisconsin. Address: The Excelsior Brick Co., Menomonie, Wis.

WANTED—POSITIONS.

WANTED—Position as superintendent or foreman in plant manufacturing face, paving or hollow ware, by a thoroughly practical man and machinist, who fully understands brick machinery and burning, also the handling of labor to get results. Capable of installing new up-to-date plants. Strictly temperate; can furnish A-1 references. Address: 3-D, care of "Brick and Clay Record." 3-TF.

SUCCESSFUL SUPERINTENDENT—Of plant manufacturing tile and other clay ware for the farm, wants to correspond with firms who are going to manufacture this line next season. Address: 2-B, care of "Brick and Clay Record."

WANTED—Position as superintendent or burner by practical man. Can burn with coal, gas or oil; common brick, press or paving brick. Best of references. Address: 2-BA, care of "Brick and Clay Record." 2-2-1P.

EQUIPMENT WANTED.

WANTED—Small hand press for making fire brick to be used around plant. Capacity need not be large, and would not care to pay more than $75.00 to $100.00. Address: 3-N, care of "Brick and Clay Record." 3-1.

DRYER CARS WANTED—100 second-hand dryer cars. Must be in good condition, 24-inch gauge. State best price and location. Star Clay Products Co., San Antonio, Texas. 3-1.

WANTED—Small or medium size conical roll crusher. Lock Box 451, Leipsic, Ohio. 3-1P.

WANTED

WANTED—Information regarding good brick or tile plant for sale. C. C. Shepard, Minneapolis, Minn. 3-1P.

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—Whole or half interest, Raymond stiff-mud 20,000 capacity brick plant, located in growing town, three railroads. Shale supply unlimited, making fine red builders, face and pavers. Good local and shipping market. Owners not brick men and in other business Bargain for right man. Address: Daniel Troy, 245 So. 4th St., Raton, N. M. 2-2P

FOR SALE—Brick plant, saw mill, lath and shingle mill, also lumber yard. At your own price. Everything in good running order. If you wish to buy write Peter Larson & Sons, Barronette, Wis. 3-2P.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR SALE—SECOND-HAND MACHINERY.

A FEW OF OUR BARGAINS in first-class, slightly used clayworking machinery:

10 steam engines, all sizes from 5 h.p. vertical to 450 h.p. Corliss.
6 H. T. boilers, 40 to 150 h.p.
12 motors, different makes, from 1 to 125 h.p.
8 steam pumps, 1½ in. to 6 in. discharge.
6 boiler feed pumps.
1 Brewer machine, with dies and cutting table (made only one kiln of tile).
1 9-ft. Frost dry pan, used only 30 days.
1 Fate automatic hollow block cutting table, used only 30 days.
1 brick cutter, good as new.
Large stock of pulleys, shafting, belting, pipe, valves and fittings of all kinds.

Let us know what you need; we can save you money. Address: Box 494, Clayworkers' Exchange, Springfield, Ill. 3-TF.

FOR SALE—Practically new, one 40 h.p. and one 60 h.p. high pressure boiler, 100 h.p. slide valve engine, 9 ft. American dry pan, automatic feeder, clay elevator, 8 ft. pugmill, No. 88 Brewer brick and tile machine, Fayets end cutting table, Brewer tile cutting table (10 and 12 inch), board delivery side cutting table, 6-track Standard steam dryer, 102 cars, centrifugal pump with gasoline engine attached, Pulsometer steam pump. W. E. Lyon & Co., Carthage, Ill.

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Iron Quaker brick machine with dump table, five leaves; either steam or horse power. Bonnot No. 21 revolving table for side-cut brick, No. 60 Brewer automatic brick cutter, two Brewer water lubrication brick dies—all good as new. Frederick Brick Works, Frederick, Ill. 3-1.

FOR SALE—One carload wooden pallets in good condition, $30.00 per thousand. One 60 h.p. stationary engine, in good order, price $150. Two dump cars, 1½ yd. capacity; one pugmill, one sander, Mascot auger machine, Monarch soft-mud machine, for sale cheap. J. M. Ault, Wyoming, Ill. 3-1.

FOR SALE—One Stevenson 9 ft. dry pan, latest model, used but little, with all new equipment. Guaranteed equal to new. Price, $600 to quick buyer. Address: J. S. Miller, Bolivar, Pa. 3-1.

FOR SALE—Largest size "D" Martin machine, new, used less than one month. One Fate crusher, new, smooth roll. One 40 h.p. firebox boiler in first-class condition. Box 15, Clio, Mich. 3-2P.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

EQUIPMENT SNAPS—Machine tools in perfect operative condition and equipment in stock for immediate shipment at big money savings.
20 in. x 12 in. Blake Jaw Stone Crusher.
4,000-lb. capacity Otis Power Freight Elevator.
35 H.P. Pierce Horizontal Gasoline Engine.
18½ in. 12 in. x 10 in. Worthington Duplex Steam Pump.
10 in. x 6 in. x 10 in. Blake Duplex Steam Pump.
50 H.P. Bullock—220 V., 3 ph., 60 cy. Motor.
20 H.P. G. E.—220 V., 3 ph., 60 cy. Motor.
4 yd. 2 side Western Dump Cars, 36 in. Ga.
Structural Steel, Lumber and Heavy Timbers, Pulleys, Shafting, Belting, Pipe, Roofing, Paint; in fact, material of every kind in tremendous quantities always in stock. Best service and lowest prices. Get in touch with us today.
Address: HARRIS BROS. COMPANY, Owners, CHICAGO HOUSE WRECKING CO., 35th and Iron Streets, Chicago.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

RAILS

SMALL ORDERS GIVEN SPECIAL ATTENTION

40, 56, 60, 70, 75, 80, 85 & 90 lb.

RELAYING RAILS
FOR SIDINGS, SPURS, ETC.

8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.

NEW STEEL RAILS
FROGS AND SWITCHES

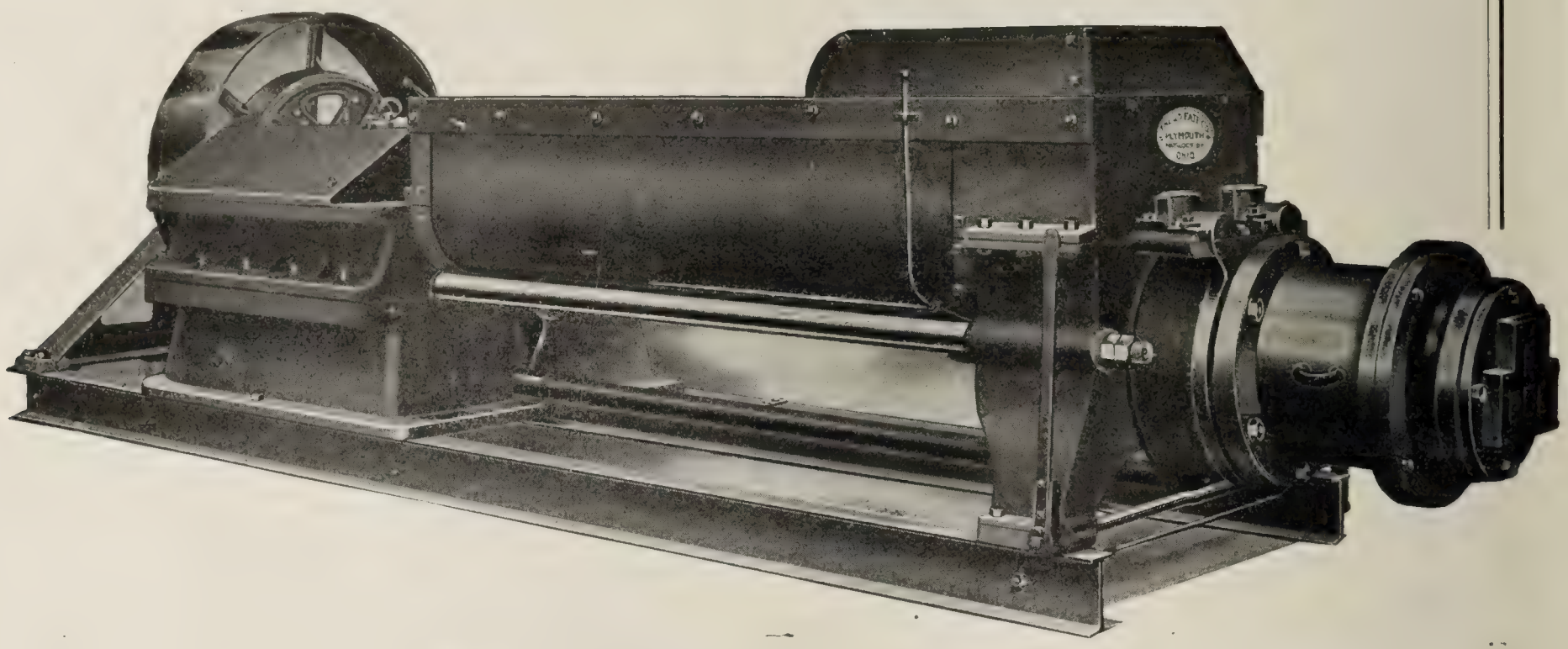
SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment

RICHARDSON & CO., INC.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

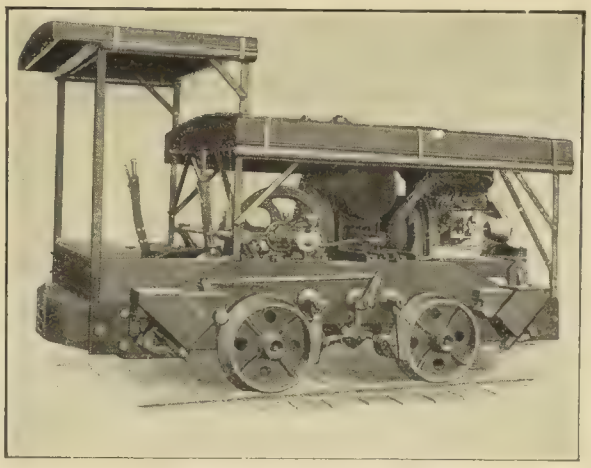
The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.





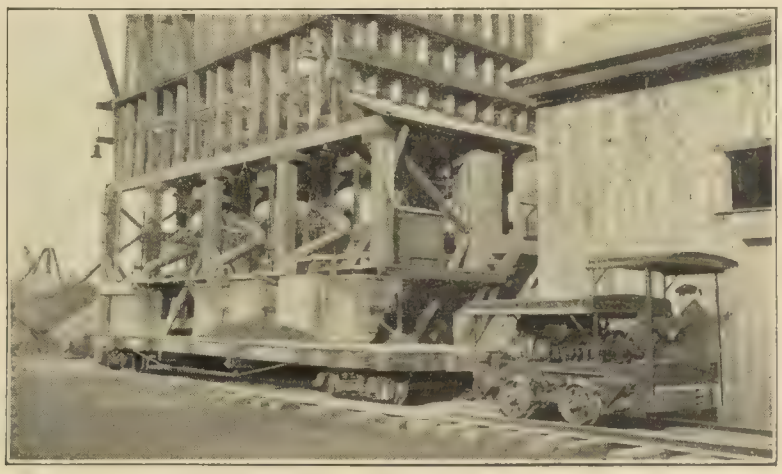


Plymouth Gasoline
Industrial Locomotives

Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.



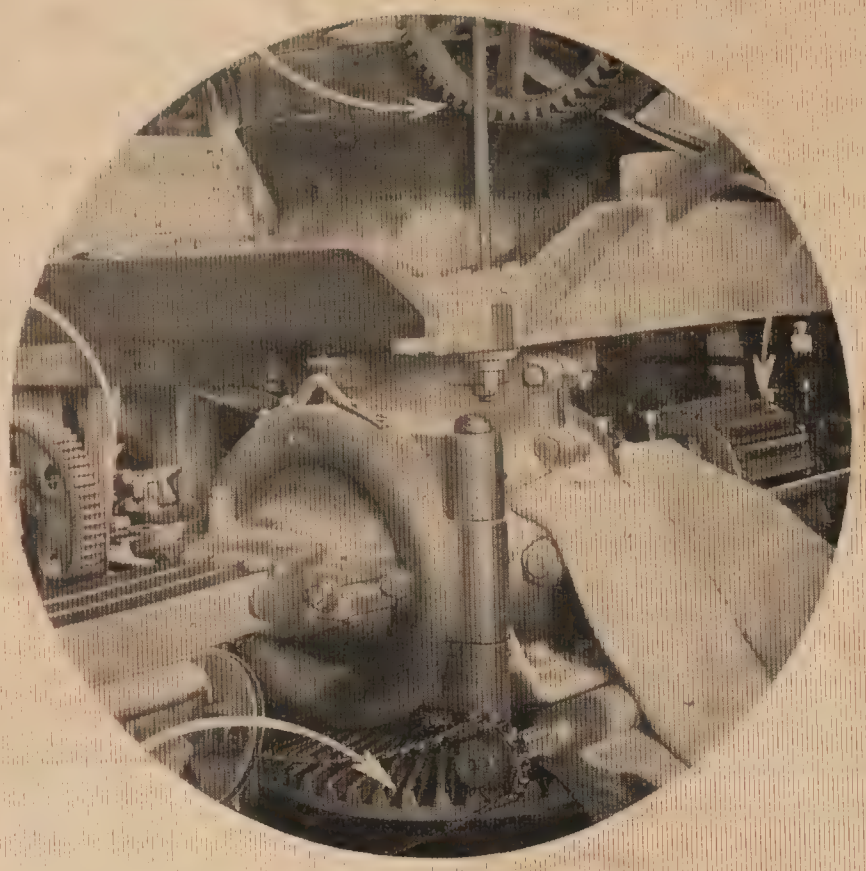


The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight-year-old boy who runs one.

The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative



Nuttall Cut Clay Working Machinery Gears

for

Dry Pans,
Pug Mills,
Sifters,
Agitators,
Plungers,

and any other machinery requiring gearing.

Address Dept. B

Nuttall

Pittsburgh

Made in U. S. A.

BRICK and CLAY RECORD

SPECIALTY WIRE CO.

Cutting Wires

2008-24 Clybourn Ave., Chicago, Ill.

Clayworkers,
Everywhere—

March 16, 1915

Gentlemen:—

Do you want to use wires on your cutting tables that CANNOT SLIP and cut a crooked brick; a wire, the loop of which positively cannot stretch, the end of the wire turned over so that it cannot cut the fingers?

Do you want to stop using cutting wires that slip the loops, that pull slack, and are without sufficient tensile strength, wires that cause small losses each day, amounting to thousands of lost brick each year, and thousands of imperfect crooked brick?

YOU CAN DO IT! USE OUR WIRES.

They are absolutely guaranteed against loop stretching, the loop will stand within twenty pounds of the ultimate strength of the wire, the burrs are turned in and cannot cut the fingers. They hold where they are placed and will cut straight brick

Send us sample today showing size of wire, and size of loop that you are using. We will send you our samples of each to try out. Made of finest steel piano wire,

Screen wire, or cutting wire in correct lengths looped or in coils.

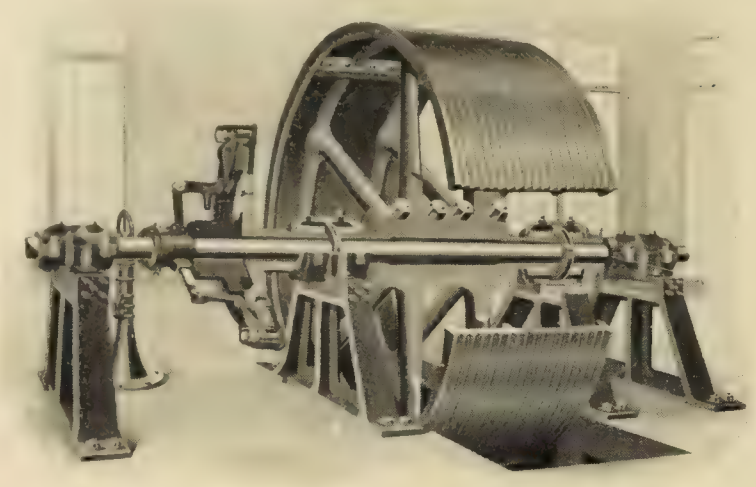
Yours for service,

ECJ/D

The Specialty Wire Co.

Vol. XLVI, No. 6 Chicago March 16, 1915

WELL ER-MADE



Quill Drives

for Heavy Power Transmission

More being used every day because they take the strain off the shaft and save the belts and power.

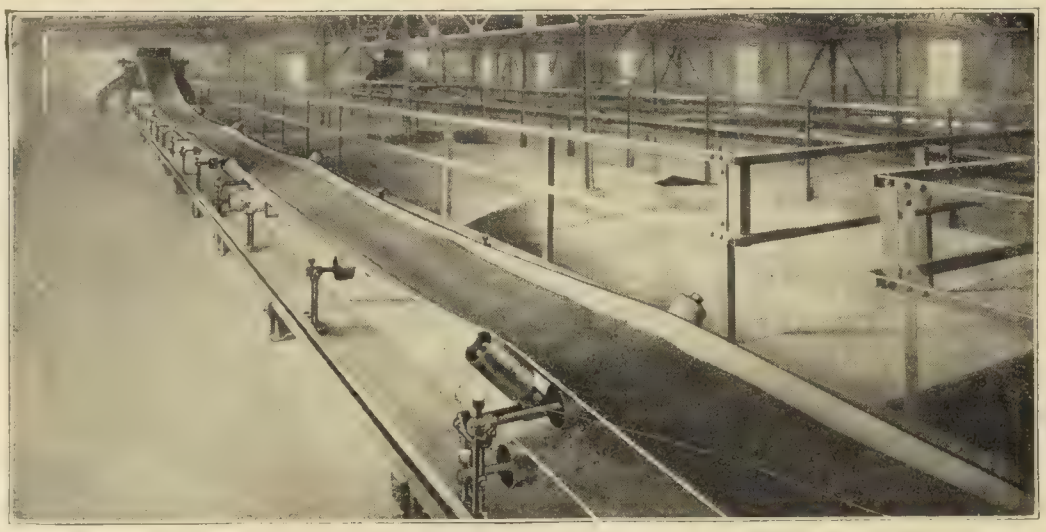
Send for our new Friction Clutch Catalogue J-27

We Build Elevators to Handle Anything

Buckets of every description, from light 2" x 2" tin
up to
Heavy Steel Buckets 84" wide and 36" pitch.

We furnish your complete elevating equipment with steel or wood heads, legs and boots.





Conveying Equipments For Handling Anything

From Crusher Run Shale to Dry Powdered Clay and Grog on to Pugged Clay or Dried or Finished Ware.

We are the People When You Want—

Elevating, Conveying and Transmission Machinery

Have You Our General Catalogue J-20?

Weller Manufacturing Co., Chicago

Trautwein DRYERS

INSURE YOUR CAPACITY

To have your plant *doing business* through 1915, you should have a Trautwein Dryer—so getting the

ASSURANCE

OF INCREASED CAPACITY
GREATEST ECONOMY
and LARGEST PROFITS

Our Dryers Accomplish These Things With Ease

Trautwein Dryer & Engineering Co.

Manufacturers—Engineers

Plymouth Building **CHICAGO**

Another Large Manufacturer Uses Smith Steel Shell Kilns

After careful and extended investigation, the Mason City Brick & Tile Co. has closed a contract for Claude Smith Steel Shell Kilns.

This Company (operating six plants) is the largest single company in the west making hollow ware.

WHY HESITATE WHEN SUCCESSFUL MEN USE UP TO DATE METHODS

A card to us brings further information

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Alliance Brick Co..... 383
Alliance Clay Pro. Co...P- 8
Alsey Brick & Tile Co...P- 6
Alton Brick Co.....P-11
American Clay & Cement Corp.....P-13
American Enameled Brick & Tile Co.....P-13
American Process Co... 606
Ambursen Co..... 626
Atlas Car & Mfg. Co... 591

Baird Machine & Mfg. Co. 590
Ball Engine Co. (Erie Steam Shovels) 599
Barr Clay Co.....P- 6
Big Four Clay Co.....P- 8
Bessemer Limestone Co..P- 8
Bradford Pressed Bk. Co.P-13
Bonner & Marshall.....P-15
Brighton Fire Brick Co..P- 6
Broderick & Bascom.... 583
Brown Instrument Co... 585
Buckeye Rolling Mill Co. 583

Canton Grate Co..... 589
Carlyle Paving Bk. Co..P-10
Ceramic Sup. & Cons. Co..... 588
Chambers Bros. Co..549-594
Chase Fdry. & Mfg. Co. 607
Chicago Brick M. Co... 600
Chicago & Northwestern R. R..... 584
Chicago Retort & Fire Brick Co.....P- 4
Childs, O. J., Co..... 594
Cincinnati Frog & Switch Co..... 584
Classified Ads 631-632
Clearfield Machine Shops 582
Cleveland Alloys Co.... 590
Clinton Paving Bk. Co...P- 8
Copping Bros..... 582
Cutshall, J. M. & Carl... 586
Davenport Loco. Wks... 586
Danville Brick Co.....P-10
Davis Fire Brick Co.....P- 4
Deavitt, H. M..... 582
Deckman-Duty Brick Co.P- 8
Dewey Bros..... 582
Dover Fire Brick Co....P- 4
Dunn Wire-Cut Lug Bk. Co.....P- 7

Eagle Iron Works..... 585
Eastern Machy. Co..... 633
Engelhard, Chas..... 586
Evans Clay Co.....P- 4

Federal Clay Pro. Co...P- 6
Frink Pyrometer Co.... 582

Gandy Belting Co..... 597
General Traffic Assoc... 584
Gerlock, H. W..... 582
Gethmann Brick Co....P-13
Globe Brick Co.....P-12

Hamburg Vit. Bk. Co...P-10
Harris Brick Co.....P- 8
Hendrick Mfg. Co..... 585
Hinde & Dauch Paper Co. 587
Hocking Valley Bk. Co..P-10
Hocking Valley Pro. Co.P-13
Hook Patent Kiln Co... 596
Hydraulic-Press Brick Co.P-13

Jackson & Church Co.. 585

Business or Busy-ness?

The average man is so busy that in order to arrest his attention, it is necessary to use large type and pictures.

Advertising space is expensive. If large type and fair sized illustrations are used, there is, as a rule, very little space for explanation.

That is supposed to follow—hence the familiar words "Send for Catalog" or "Write—today—for Booklet."

The average man is so busy—or thinks he is so busy (which does **not** amount to the same thing) that he does not find time to write—today—or ever, for booklets and catalogs.

Yet, when he makes a foolish purchase, he blames the salesman—the house the salesman represents—the business he is in—in fact, he blames everyone but himself, who is most to blame.

The advertiser spends considerable money preparing printed matter that states the merits of his article, and in such a way that, if his claims be false, his competitors may make capital out of what he says.

As a consequence, in the average booklet, the printed lines, explaining a machine, a system or an appliance, are apt to be true.

Then the advertiser spends considerable money calling your attention to what he has to sell, and to the booklet explaining it.

It seems strange, does it not, that you—an eventual purchaser—haven't time to write for that booklet?

The letter "P" preceding a number refers to the "Pink Section"

Keim Brick & Tile Co...P-15
Keller Brick Co.....P-13
Kimbell, S. S., Brick Co.P-13
Kissel Motor Car Co.... 601

Lehigh Car Wheel & Axle Works 583
Lehigh Portland Cement Co..... 589
Link-Belt Co..... 551

Main Belting Co..... 547
Manufacturers Eq. Co... 603
Marinette Iron Works... 598
Marion M. Fdry. & S. Co. 629
Marion-Osgood Co..... 607
Marion Steam Shovel Co. 629
Marsh-Capron Co..... 588
Martin Brick M. Mfg. Co. 593
Martin Grate Co..... 602
Maurer & Son, Henry...P- 4
Mayer Brick Co., C. P...P-10
McArthur Brick Co.....P-12
Mexico Bk. & F. Clay Co.P- 6
Metropolitan Pav. Bk. Co.P-10
Mowrystown Brick & Tile Co..... 595
Murphysboro Pav. Bk. Co.P- 6
Murray Iron Wks. Co... 587

N. P. B. M. A.....P- 9
National Dry Kiln Co... 625
National Roofing Tile Co.P-15
Nelsonville Brick Co....P- 8
Nuttall Co., R. D..... 627

Ohio Gal. & Mfg. Co... 606
Ohio Kiln Co..... 591

Pettigrew Foundry Co.. 584
Pittsburgh Tile Mfg. Co.P-15
Purington Pav. Bk. Co..P-10

Queens Run Fire Bk. Co.P- 4
Quinn, John .....P- 6

Roessler & Hasslacher.. 595

S. A. F. E..... 630
Sawyer Belting Co..... 626
Scandinavia Belting Co.. 552
Schaffer Eng. & Eq. Co. 607
Schofield-Burkett Cons.. 628
Schultz & Son, A. L.... 592
Shawmut Paving Bk. Co..P-10
Smith Co., Claude..... 545
Smith, W. W..... 625
Soisson Fire Bk. Co....P- 4
Southern Fire Bk. & Clay Co.....P-12
Standard Dry Kiln Co.. 605
Stark Brick Co..... .....P-12
Sterling Brick Co.....P- 6
Stupakoff Laboratories... 583
Sturtevant Co., B. F.... 582

Taylor Instrument Companies 593
Terre Haute Vit. Bk. Co.P-11
Thew Auto. Shovel Co.. 627
Trautwein Dryer & Engineering Co..... 545

United Brick Co.....P- 8
United States Roofing Tile Co.....P-15

Webb Wire Works..... 606
Weller Mfg. Co..... 544
Westinghouse El. & Mfg. 628

There Is Always Some One Thing That
Excels for a Given Purpose

LEVIATHAN BELTING

Is Only Second to Clay as an Essential
in a Successful Brick Plant

"Ask the Man with the Dividend-Payer"

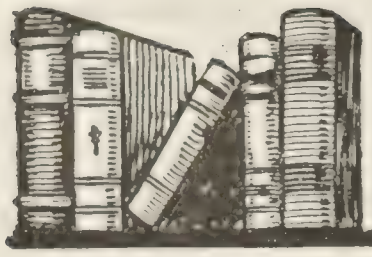
Main Belting Company

Manufacturers and Engineers

Philadelphia
Pittsburgh
New York
Seattle
Chicago
Birmingham

Main Belting Co. of Canada, Ltd.
Montreal Toronto

Send for Booklet No. 2 on Conveying



Book Department



Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

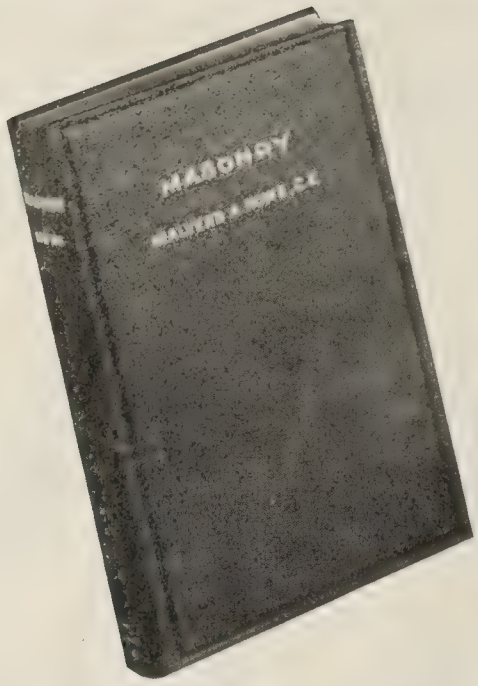
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



169 pages, 6x9, 115 Illus. . Cloth $1.50 net

A SHORT TEXT-BOOK on Masonry Construction, including descriptions of the materials used, their preparation and arrangement in structures, by Malverd A. Howe, C. E., Professor of Civil Engineering, Rose Polytechnic Institute.

Part 1 is devoted to masonry materials, including natural stones, their formation, quarrying, preparation, and use in masonry, including descriptions of the latest models of power tools; to brick—its method of manufacture, drying, burning and a host of other valuable facts, hitherto unpublished. The newer types of kilns are described and discussed.

Part II contains considerable information on the subject of brick and hollow tile masonry, and the approved way of laying these materials. This deals with the composition of mortar joints and equally interesting points—particularly to the men who make or sell burned clay products.

This book may be obtained through "Brick and Clay Record's" Book Department for $1.50, postpaid.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe).$1.50

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy)....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Pottery (Geo. J. Cox).$1.25

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller)....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

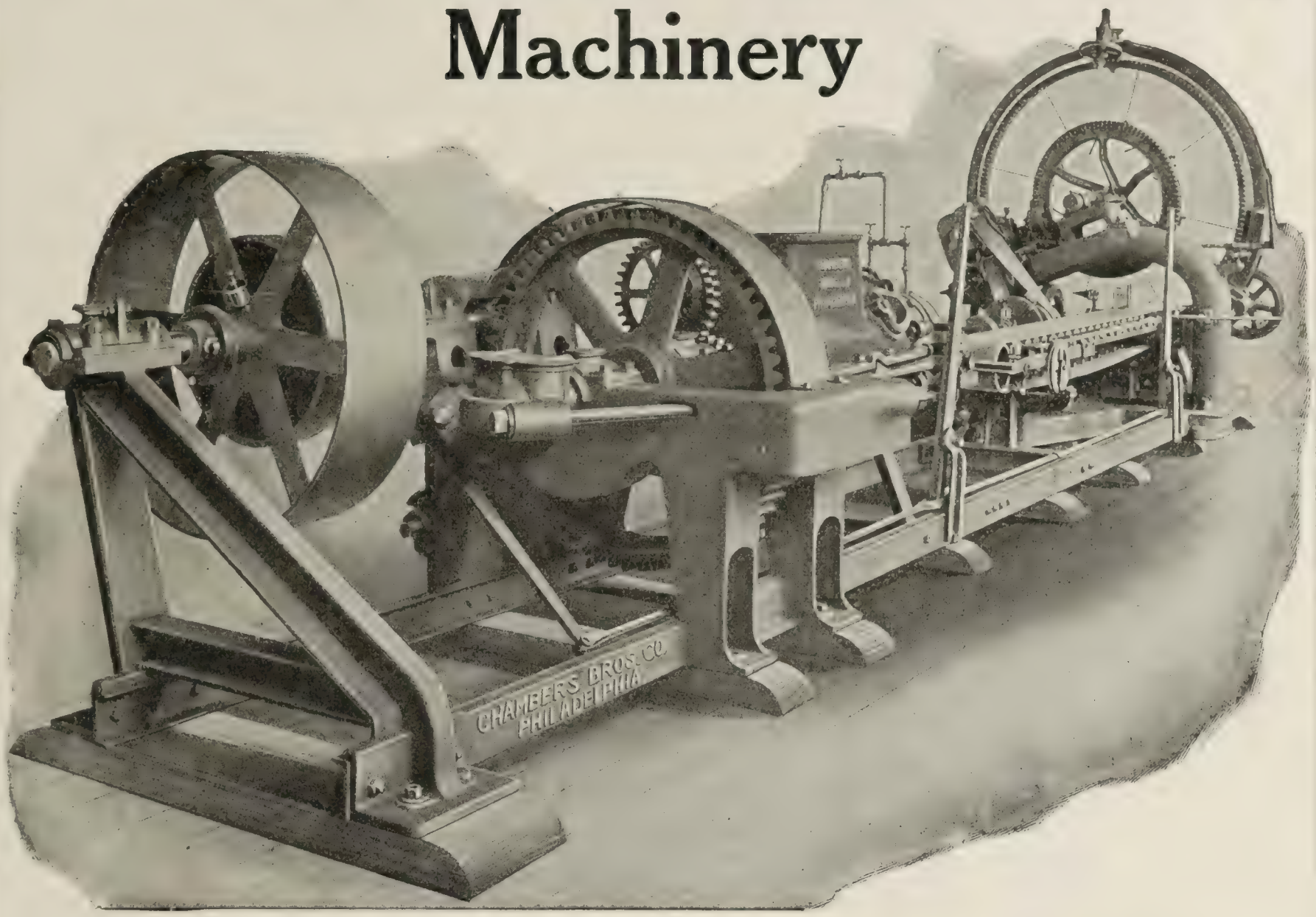
Vitrified Paving Brick (Wheeler).....$2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators
and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 594)



—we'll answer that question!

DON'T let your plant problems worry you one single day — tell us your troubles, we'll help you solve them. Look over this and other issues of "*Brick and Clay Record*" and see what knotty problems we are helping our readers to overcome.

There is no charge—It's part of our service

Also Tell Us What Machinery or Equipment you are in need of. Our Service Bureau will put you in direct touch with manufacturers who can supply your needs promply. Write us and save yourself the trouble of writing to a dozen different people.

ADDRESS: "SERVICE DEPARTMENT"

BRICK AND CLAY RECORD

445 PLYMOUTH COURT. *CHICAGO, U. S. A.*



To Every Man Interested in Efficient Power Transmission—

Link-Belt Company has issued this 112-Page Data Book which contains all the information to enable you to figure out the correct silent chain drive for your work and to determine its exact cost.

It is the only book of its kind ever published. It tells all about that modern and efficient medium for transmitting power—the Link-Belt Silent Chain Drive—the drive that is as flexible as a belt, as positive as a gear and more efficient than either.

Every Manager, Superintendent, Foreman, and every user of power owes it to himself to study this book. Sent postpaid on request.

Link-Belt Company, 39th Street and Stewart Ave., Chicago, Ill.

Please send to the undersigned, Link-Belt Silent Chain Data Book No. 125.

Name..... Address.....

Firm..... Town and State.....

Brick and Clay Record.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

"SCANDINAVIA"
THE CONVEYOR BELT

No Plies

No Stitches

No Laps



Not Affected By Water, Oil or Dust

(1,500 feet of 22 inch Extra Stout)

"Scandinavia" is the same all the way through, and the wear is absolutely uniform.

No weak spots in "Scandinavia."

Surface wear does not destroy "Scandinavia's" usefulness.

"Scandinavia" has great tensile strength.

Superintendent of plant illustrated states:

"Scandinavia" wore longer and better than 6-ply rubber and 8-ply stitched canvas put on at same time."

Write our nearest office for full details.

SCANDINAVIA BELTING COMPANY

106-108 Reade Street, New York.

BRANCHES:

Atlanta, Boston, Buffalo, Chicago, Cleveland, Easton, Pa., Pittsburgh, San Francisco, Los Angeles, Portland, Ore.

Canada—Federal Engineering Co., Limited—Toronto and Montreal.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, March 16, 1915

Vol. XLVI No. 6

Table of Contents

American Tilemakers Excel.....561
Meeting Competition 560
"Brickesses and Bricquettes".....556
Burned Clay vs. Lumber.....563
Convention Echoes 586
Kiln Expansion and Bracing.....566
Reaching the Farmer.....571
What Are You Going To Do About It?.....570

The Editor's Corner.....554

Freight Tariffs and Troubles.....578
Letter Box 575
Machinery and Equipment.....581
With the Potteries.....574
Questions and Answers.....579
Semi-Monthly Trade Review....584
The Superintendent 577
Wake of the News.....589

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

ON ANOTHER PAGE of this issue, appears an article relative to the low cost brick residence that is being erected at the Panama-Pacific International Exposition.

This article was written by one of the officers of the association which is handling the funds subscribed for the purpose and he announces, in no uncertain words, that the project will be a failure **unless the brickmaking fraternity gives it instant support.**

He shows an illustration, made from a photograph taken during the first week in March, which indicates that the house is under roof and well on to completion. Every cent which has, so far, been subscribed, has gone into the construction of the house.

More money is needed for its completion. More money is needed to pay for its furnishing, for a caretaker, that the house may be opened to visitors.

A fund is needed to cover the cost of the repairs which will be made necessary by the wear of millions of feet passing through the rooms of the lower story.

A fund of no mean proportions is needed to prepare printed matter to be given to those who visit the house. Without this, the demonstration is of little value.

You Have Had Notice

For more than a year "Brick and Clay Record" has made prominent mention of this publicity project. To it, by the way, comes the credit of first suggesting it to the brickmakers of America.

"Brick and Clay Record" made the preliminary negotiations with the Exposition authorities and outlined the purposes of the project to its readers.

It called upon the Chicago Face Brick Association for advice and assistance and, at the suggestion of prominent members of that organization, a duly chartered association was formed, for the purpose of handling the funds and of directing the campaign of publicity.

With the organization of the Panama-Pacific Clay Products Association, a preliminary fund of Three Thousand Dollars was raised by the Chicago face-brick and common-brick men.

This money in hand, Herman L. Matz, president of the newly formed association, made his trip to San Francisco and arranged with local clay products manufacturers and dealers to take over the work of construction.

After that, by personal solicitation, by circular letters and printed matter, the association has succeeded in raising an additional Two Thousand Dollars; this, with the Three Thousand Dollars previously subscribed, has brought the house to the condition shown in the illustration above mentioned.

A World of Excuses

The brickmaking industry, with characteristic indifference, has withheld its further support. While **talking** of raising a fund that runs well into six figures, it has put the Panama-Pacific Clay Products Association in the position of **doubting whether any publicity work for brick will be supported by the men whom this publicity is designed to benefit.**

While no objection has been raised against the plan and scope of the project—no doubt expressed as to the immense impetus it will give to the building of brick residences—the appeals for funds have been met with a world of excuses which ran the gamut from "We are subscribers to so many other publicity schemes" to "Our margin is so small that we cannot afford to pay out anything."

A Small Amount Wanted

Up to this time, in soliciting contributions for this work, the association has been somewhat indefinite. It now comes before the industry with a definite proposal. It is that **every brick manufacturing concern, which has not already subscribed to the fund,** send its check for Ten Dollars and a pledge that it will subscribe a like amount each month until the Exposition is closed.

Aside from the almost certain knowledge that this small investment will be returned to each subscriber, in the increased amount of brick building which will be done as a result of the educational work done at San Francisco, there is an additional profit.

Each subscriber will have evidenced his willingness to support the unselfish work of certain men who have freely given of their personal time and private funds for the general good. To stamp work of that kind with the brand of failure, is to discourage others who would follow, in case this publicity project scored a success.

The "Committee of Ten" appointed at the N. B. M. A. convention in Detroit will have a hard task before it, in trying to secure a fund which will combat the activities of the lumber interest, if this little house at San Francisco is allowed to stand—unoccupied and unopened **—a mute protest against the niggardliness of the brick industry of America.**

The Time is Now!

Perhaps the worst part of this is that the Five Thousand Dollars already subscribed and spent will be worse than lost; that the time, thought and energy expended upon this publicity project will have been given in vain; that the men who put their money in this proposition will refuse to support any other, on the ground that they, in turn, were not supported by their fellows. It is a setback to the progress of the industry.

It has been suggested that the reason the number of individual subscriptions has been so small, is that no definite lines were drawn as to the amount that should be subscribed. This omission has been corrected—**your check, for Ten Dollars, drawn to the order of Charles Bonner, Treasurer, and mailed to room 1205 Chamber of Commerce Building, Chicago,** will help the situation wonderfully.

If, with this, you will write a letter stating that a check for a similar amount will be mailed for the next five or six months, a new hope will spring in the breasts of those who have been working so loyally for the betterment of brick.

The Power of Its Appeal

The three objectives of publicity are to arrest attention, compel thought and direct action. These objectives are well served in the publicity planned by the Panama-Pacific Clay Products Association.

By building an attractive brick residence at the San Francisco Exposition they will arrest the attention of millions of prospective home-builders.

By building a house that is so attractive in its outlines and so clever in its interior proportions that it has been noticed by one of the largest periodicals devoted to women, it has, already, compelled thought.

Within a month, this prominent women's paper, with a circulation well in the millions, will print pictures of the house and a description of its floor plans. **And it has paid the architects for the privilege of doing this.**

By sending plans and specifications of this house to a hundred cities, where contractors are making bids, agreeing to erect the same house in those cities as has already been built at San Francisco, they are giving dependable figures on what modern, model, fire-resisting construction costs, in the home city of many thousands of our people, **who can afford to build with brick, but who do not know that they cannot afford to build in frame.**

This is directing action. It serves the last purpose of publicity. It brings back the dollars that are invested **and distributes those dollars to every corner of the country.**

The entire project is well planned. It has covered every contingency, save the one that seemed to offer the least difficulty—which was to bring the men who made brick **face to face with a great opportunity.**

That is the object of this editorial—will the brickmakers see it, in time to bring success to the efforts of those who have launched the enterprise and backed it up with their own hard, cold cash?



The Clippert Girls

"Brickesses and Bricquettes" Make Inspection Trip One Long to be Remembered

Profit-Sharing Partners in Brickmaking Plants Observe Ways of Increasing Their Share of "Dad's" or "Hubby's" Income

IN every brick plant there is a partner who, while not exactly "silent," is vitally interested. She has the privilege of spending at least three-quarters of the profits, and her help and encouragement has made and unmade many a brickmaker. Hence her interest in the way brick are made —in modern machinery and modern methods of increasing profits.

AFTER two busy days and as many nights spent in close communion with brilliant speakers, whose subjects ranged from expansion in kiln crowns to the width of St. Louis streets after midnight, a goodly portion of the delegates to the National Brick Manufacturers' convention were glad to take advantage of the out-of-doors program arranged for the third day, which was Friday, Feb. 19th.

The Detroit weather man worked overtime to produce the kind of weather that makes life in his city so well "worth living." The start was made sufficiently well into the forenoon to allow a leisurely breakfast and the Michigan Central station was not so far from the Hotel Statler as to make the "constitutional" that many of the visitors took, a matter of great achievement. Those who did walk, however, came to the depot with flushed faces and were ready to withstand a trip much more arduous than that which awaited them.

As has already been told in "Brick and Clay Record," a special train had been chartered for this trip, and although the party was by no means a small one, there was plenty of room in the five coaches that were provided, for all of them. The Detroit Reception Committee made this trip memorable by an open-handed hospitality that earned the thanks of all who participated.



Boxes of bon-bons were thrust upon the ladies of the party, many of whom refused to accept more than four or five boxes, and the same may be said of the all-tobacco cigars that were passed to the men.

Being a "special," the train stopped every once in a while and, as it happened, always beside "one of Detroit's greatest brick plants." Someone must have acted as advance-agent, for in nearly every instance, as many of the employes of these brickyards as could be spared from the pleasurable occupation of making the "best of all building materials" were lined up along the right-of-way and waved hands, handkerchiefs and hats to the "tourists." Steam-whistles were sounded and fire-bells rung so that one would imagine an administration at Washington had been changed or a new year had begun.

During the stop at one of these plants the welcome announcement was made that a light luncheon would be served and as many of the delegates consulted their watches, from which dangled "Brick and Clay Record's" triangular fob, they found that the morning had all but gone. This, perhaps, had something to do with their appetites. At any rate, large trays of assorted sandwiches were speedily emptied and there being nothing stronger than coffee, enough of America's foremost breakfast beverage was consumed to make Post of Battle Creek fairly envious.

Thus fortified, the "investigators" were brought to a point fairly near the plant of the Geo. H. Clippert & Brother Brick Company, where many of them saw, for the first time, common building brick being made by modern machinery.



Boarding the

train again, the party was taken in a comparatively short time, to the plant of the Ford Motor Company—the home of the Ford automobile.

As the party alighted, it found itself being "filmed for posterity" and as the long line wended its way toward the main buildings, the movie-man seemed omnipresent. In point of fact, every time that the party of visitors turned a corner, they could hear the whirr and click of the moving picture camera. It has not been reported, as yet, how soon we may expect to see ourselves as others see us—perhaps in the Hearst-Selig Weeklies or as participants in some "mob scene" demonstrating a drama in "reel life."

Passing from the path of the cinema man, the party found itself in one of the buildings devoted to the manufacture of Ford cars. Some idea of the immensity of this plant can be gained when it is noted that more than forty-seven acres of ground are covered by the factory buildings. Many of these buildings are six stories in height and, for the most part, are built of reinforced concrete. Every once in a while, as the "guides" pointed to the fact that these buildings were absolutely fireproof, a slight shiver ran through the ranks of the brick men. Henry Ford, however, has not made the mistake that Thomas A. Edison made at West Orange. Ford has provided ample space between his buildings and has segregated all departments where any highly inflammable material is used. In other words, Henry Ford stakes the genius of his engineers against the spread of fire rather than against fire itself. Here is the point where Thomas A. Edison failed—he figured that such a thing as having a fire in his factory was impossible.

A dozen or more "guides" were assigned to keep the party from throwing monkey wrenches into the machinery or putting their fingers in places where they were apt to secure surgical attention without their owners having to call a physician. As a consequence, the party passed, without any fatalities, through the Ford plant, following the processes of manufacture up to the point where on the assembling tracks, a Ford car was "born" every twenty seconds. Many of the party lingered long enough to see thirty or forty cars come into being, and then passed on, mystified.

A little later, coming through the administration building of the Ford Motor Company, the party was made to assemble on the terrace where a group photograph was taken. This photograph is reproduced here and is sufficiently clear to enable nearly all of those who made up the party to see how they looked standing in the shadow of the parent plant of a company with a surplus of fifty million dollars.



It may be of interest to those who made this trip to know that in this and other Ford plants, more than twenty thousand people are constantly employed and that of these, close to seventeen thousand are on the profit-sharing basis. The Ford Motor Company was organized in June, 1903, with a subscribed capital stock of $100,000, of which only $24,000 has ever been paid in, in cash. On this amount the Ford business has been built to its present extensive volume. It has always financed itself. It has never given any notes, sold any stock, issued any bonds or placed any mortgages. The capital stock, at the present time, is two million dollars and there is a surplus of fifty million dollars.



Mrs. C. P. Mayer

The plant which was visited on this trip is one of twenty-three manufacturing plants located in as many different cities throughout the United States. In addition to this, a factory with a capacity of 35,000 cars per year has been established in Ontario, and one in England with a capacity of 10,000 cars per year. The production and retail sale of cars for the fiscal year, ending October, 1914, was 249,349 cars, an average of 831 cars per working day.

Having enjoyed a "special" railroad train for the morning trip, a pleasant diversion was afforded by the Detroit Reception Committee in arranging that the trip back to the Hotel Statler should be made in specially chartered trolley cars, which carried the "tourists" through Detroit's residential and business section, the points of interest being explained in each instance by representatives of the Detroit committee who were assigned to the several cars.

The party, returning to the hotel, felt amply rewarded for the time which they had expended and were duly grateful to brickmakers of Detroit for the splendid program which had been arranged and for the attention to detail which marked every step of the way. Nothing occurred during the day which would, in any way, mar the pleasure of those who took the trip and every precaution was taken to insure them against discomfort and fatigue.

It may be said that those who missed the inspection trip missed the best part of the convention.

The Group Picture

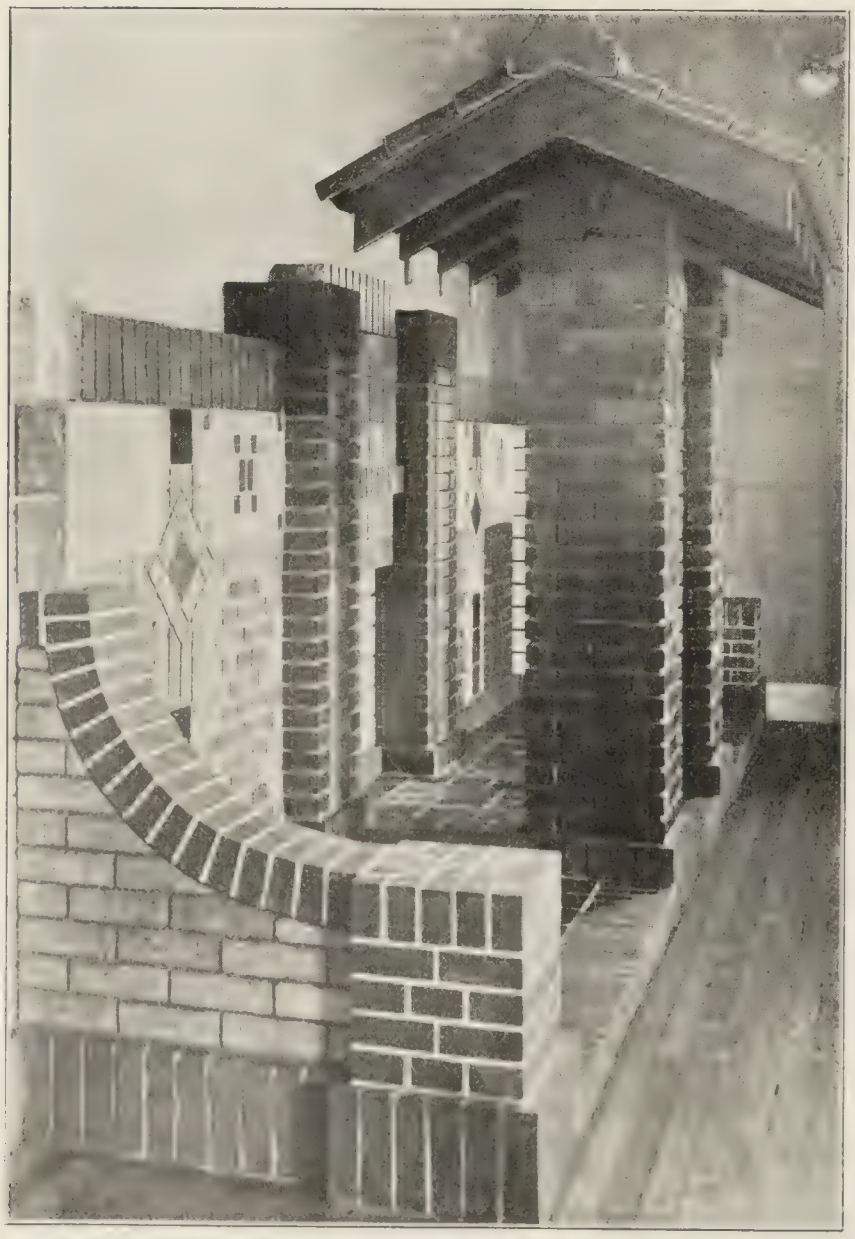
Taken on the Terrace in front of the Ford Motor Company's Administration Building.

Will Be Found on Page Following



Officers of and Delegates and Visitors to the National Brickmakers' Convention,

Los Angeles Pressed Brick at San Diego Exposition



The Exhibit of the Los Angeles Pressed Brick Company at the Panama-California Exposition, Now Under Way at San Diego, Calif.

The accompanying illustration shows an unusually artistic display of brick and tile made by the Los Angeles Pressed Brick Company at the Panama-California Exposition, San Diego. This pleasing exhibit occupies a space 17 feet 9 inches long by 4 feet 6 inches deep in the Southern California Counties Building. The effective architectural treatment adds a convincing argument to "Build With Brick."

The brickwork comprises enameled, dry-pressed and wire-cut face-brick, "Rug" brick and "Ruffled" or rough texture face-brick. In all, about thirty colors and shades, many of which are exclusive, give some idea of the variety obtainable. Mortar joints of five colors besides black and white harmonize with the brick. Inserts of 6x6 enameled tile, in soft tones show the possibilities of combining brick and tile to secure good decorative effects.

In the center of the brick wall is a representation of a mantel formed by two projecting columns. The columns are of "Old Gold" pressed brick, corresponding to Eastern "Iron Spots" with a header course on either side of dark "Old Gold." Above the firebox and between the columns are 6x6 unglazed green mottled tile. The base of all brickwork is made of dark "Old Gold," while the same brick laid on end is used for the top or capping above mantel columns and panels. On the extreme right and left, or on top of buttresses, "Rug" brick are shown, as well as in one of the panels. Under a license agreement with the Hocking Valley Products company, the Los Angeles Pressed Brick Company has recently secured the manufacturing rights of "Rug" brick for the state of California.

The two piers supporting the tile roof are faced on all four sides with red "Ruffled" brick laid with a black raked joint. This brick is manufactured at the Santa Monica plant and has proved very popular throughout Southern California. Red "Ruffled" brick of a different burning clay produced at the Port Richmond factory are displayed in panel next to the right-hand buttress. The floor is laid of Richmond Red



Assembled on the Terrace of the Ford Motor Company, Detroit, Mich., February 19, 1915

Quarry tile with border of 6x6 dark green glazed tile and outside border of dark "Old Gold" brick.

The rest of the material featured, including Spanish tile on front and Italian tile on back of roof, both in natural red, are manufactured at this company's Los Angeles plant.

Crooksville (Ohio) Citizen Urges Brick Road

In a speech delivered recently in the opera house at Crooksville, Ohio, Michael Tague sought to stir the citizens of that town to action in demanding a brick road from Crooksville, in Perry county, to New Lexington, the county seat.

Mr. Tague pointed out that in the fall of 1914, the county commissioners bonded the county for $50,000 for a brick road from Junction City to New Lexington. They have again bonded the county for the additional sum of $90,000 for a brick road from the village of Somerset to the county seat. Both of these highways are now in the course of construction. While other towns in the county, Mr. Tague said, have improved roads, Crooksville is still without these conveniences.

He closed his talk by urging that a committee be sent to petition the county commissioners to give Crooksville a brick road to New Lexington, and so lift the market road between these two points out of the mud.

"It's An Ill Wind That Blows No Good"

James J. Hinde, of the Hinde Brick and Tile Company, of Sandusky, Ohio, has called our attention to an article published in the "Scientific American" of February 6, under the heading "The Effect of Bombardment on Concrete." The article has nothing to do with the coming advertising campaign of the National Brick Manufacturers' Association.

In Mr. Hinde's letter, he points to the fact that this article is of great importance to brickmakers, as the principle involved will apply to railroad retaining walls, bridges, dams, tunnels and acqueducts, as in times of war, the protection of public utilities and avenues of transportation are of vital importance, and should be so built that a single shot, placed, perhaps, by a spy, could not utterly demolish them. The article from the "Scientific American" follows:

A striking feature of the pictures of the Belgian forts bombarded by the German 42-centimeter guns is that the walls and roofs struck by the projectiles are not pierced smoothly by the shots, but completely shattered, even when the explosive force of the shells plays no part. These fortifications consist chiefly of concrete and armored concrete. According to an article by Prof. P. Rohland which recently appeared in the "Zeitschrift d. V. d. Eisenbahnverwaltungen," the same phenomenon has been observed in experimental practice with targets of reinforced concrete. It was found that the shots did not break holes or fissures as in steel targets, but caused the whole target to crumble into small fragments.

Prof. Rohland holds that the reason for this singular behavior of concrete lies in the fact that there is a condition of high tension in sheets, walls, roofs, etc., of concrete, due to the collodial chemical nature of the cement, whose separate particles are pressed extraordinarily close to each other. When this tension is relieved at any point by a bursting shot the complete crumbling of the entire sheet of concrete is the inevitable result. Hence, he advises a return to the use of brick for fortifications. When a brick wall is struck by a shot the result is merely the tearing of a big hole, since owing to the looseness of the structure only the parts in immediate contact with the spot hit are affected.

An Outlet for Clay Silo Blocks

There is a concern in Philadelphia, Pa., that has manufactured stave silos for upwards of sixteen years, and which has written to "Brick and Clay Record" asking for the names and addresses of manufacturers of vitrified silo blocks, it being the intention of this concern, in the future, to turn its attention to the selling of clay silos. The name and address of the firm will be sent to any of our readers who will write to this office requesting the information.

Meeting Competition

A Page of Strong Arguments for the Man with a Brick Selling Office or a Brick Making Plant

REPRODUCED by permission from the copyrighted proceedings of the National Brick Manufacturers' Association. This is a paper presented at the convention recently held in Detroit, Mich.

By F. W. Fitzpatrick

PERHAPS the mere sentiment of the thing does not appeal to you overmuch—just the fact that you represent a product that has made good and held its own and has never been found wanting and all that—for some six thousand years; a splendid inheritance that ought to spur men on to noble deeds and to a most valiant defense of that splendid product. But then something more material certainly must appeal to you, the fact that you have millions of dollars invested in your plants, and the further fact that the profits are not what they once were, nor are your sales what they ought to be under the natural, orderly growth of business. Conceding that the past few years have not been banner building years, yet, taking what building has been done as a basis of calculation, you have not had your just proportion or share of that business. Altogether too many of your plants have been shut down for lengthy periods. You are suffering from slightly more than a mere "psychological" depression.

You have a competitor, a rival. He's not as old nor as respectable as you, nor has he any long line of noble ancestry back of him. He's only a "kid," scarce twelve years old. Ten years ago you hardly knew of his existence. But he is endowed with endless impudence, his aggressiveness is admirable, he is a bit careless with facts and truth, but you can't help but admire his grit and readiness with the "gab" and the fists if need be. You held him in contempt five years ago. He but pleaded for a show. City laws and insurance boards looked at him with disfavor and legislated against him, people only tolerated him where something very cheap and second class could pass muster.

He went through some hard sledding, but he stuck together, he fought with a common fund, he had all sorts of vicissitudes, his work panned out badly, it crumpled on him, it fell down, it acted so that had he not possessed the grit of a born fighter it would have run him off the face of the earth.

Stickativeness, even with an inferior product, spells ultimate success. Today concrete, in spite of its bad behavior, its palpable defects, its more downs than ups, advertised by its very collapses, has become a competitor worthy of your steel. He has danced around in public, subsidized papers, waved banners before the engineers and generally capered about in such a flood of white light, such publicity, that he is accepted everywhere not as a mere substitute for, but as an equal of his betters. Insurance rates recognize that equality; building codes tacitly accept it. Speak of a fireproof building and people think you mean concrete; mention building in any way and the popular mind pictures concrete. They have so persistently kept the speckled rod before the ewes that seemingly nothing but concrete has been conceived. Newspapers that are not subsidized rave over concrete because they've heard of nothing else and know no better. I tell you the nation has gone concrete-crazy. We're a people of fads, and public opinion is easily molded by persistent reiteration. Advertise it sufficiently and bleat loudly enough about it and you'll induce people to eat concrete pies and sleep in concrete beds as a sure cure for rheumatism.

They've advertised and boomed and worked and lied until today you are the people asking for a fair show; you are asking to have your material "considered." You've almost conceded the point that concrete has first choice and the lead. It has so hypnotized the architects and engineers that they think and figure in terms of concrete and you are expected to produce results "equal to concrete."

In New Orleans, and but a short time ago, on most important state work, the engineers (whom, I would say, were merely hypnotized, not subsidized nor partisans for gain), men noted in their professions, claimed in open meeting that they had *not* considered seriously either brick or fireproofing terra-cotta, but had selected reinforced concrete because it *was the best and cheapest construction.* They averred that if they had had a little house to build, instead of a $5000,000 cotton storage plant, they would, perhaps, have used brick because it was pretty, especially the "tapestry" kind! And, further, they voiced the surmise and opinion and belief of a very great number of engineers and affirmed in loudest of terms that the brick industry of America was a dead industry!

Wake up! It is not a dead industry. It is a giant who has done much and for so many thousands of years that he has grown a bit fat and flabby and tires easily and loves to sleep in the sun. Shake him up a bit, put him through a course of training to get him into condition again, get him out of his satisfied, complacent lethargy and self-sufficient stupor!

You have the numbers, you have the intelligence and the skill, you have the money, you have the goods—the best that man ever devised—have you the gumption?

Read the Article on Page 570

It Has a World of Meaning for Every Man who Makes or Sells Brick

What Are You Going to Do About It?



Looking from the Entrance of the Hotel, Through the Lobby to the Grill Room in the Rear, the Tile Panels Depicting Scenes from Holland are Very Conspicuous

American Tilemakers Excel Foreign Producers

Necessity Aids in Development of Better Grades "Made in the U. S. A."

AS DAYS PASS, the sometimes fancied, sometimes real superiority of "foreign made" articles becomes less. The word "imported" has, in many cases, carried with it an undeniable mark of better workmanship than the domestic equivalent attained. But, with the foreign supply stopped, and the demand for finer wares as insistent as before, American potters and tilemakers are "finding themselves" and producing wares that are superior to those formerly bought exclusively in European markets.

THE EXPRESSION is often heard that a person "ought to be hit with a brick," but until the New Morrison Hotel opened its doors to Chicago on December twelfth, nineteen fourteen, the idea that one might be "struck by tile" had not yet been evolved.

Figuratively speaking, however, the guest who happens into the new structure which is already famed for the new and sane ideas used in its construction, is "struck by tile" in the most beautiful forms of tile-topped tables, tile-faced columns, tiled panels, floors, bath-rooms, kitchen, bakery, service bars, ice boxes and even the dance-hall floor; and finally, is more than "struck" by the general effect of what comprises one of the most distinctive and inviting dining-rooms ever created, the Dutch Grill.

Harry C. Moir, the president of the Morrison Hotel Company, is known for his desire and ability to gain the best and has most successfully maintained his reputation with the new establishment, which speaks from every nook and corner of careful design and excellent taste.

Incidentally, the remarkable construction is a tribute to the "Made in the U. S. A." plan and fully substantiates the remarks heard at the outbreak of the European conflict, when it was prophesied that the merchandise heretofore imported could and would be manufactured here.

There is an example of American aggressiveness and adaptability in the tile work of the New Morrison Hotel which could be followed by many American manufacturers in all lines that have felt the foreign competition in the past; the toy, dye, lace and other makers of merchandise who have constantly given way without effort to the European trade, should take hope and apply renewed efforts.

The ingenuity of the Chas. F. Lorenzen Company, of Chicago, the contractors, who originated and completed the grill room and other tile work in the hotel, was demonstrated as a conspicuous example of the resourcefulness of some of our American business men. When the hostilities developed in Europe the tiling intended for use in the New Morrison Hotel had been on order from Holland and Germany, but owing to their inability to make the necessary foreign connections for the delivery of the tile, these contractors found themselves in a dilemma exceeded only by their tremendous ability of adaptation.

They found themselves confronted with the problem of completing the grill room on schedule time without any possibility of receiving the most important part of its decoration from abroad. The tile that had been ordered had never been made in this country and all other parts of the world where similar tile could be procured were closed in a steel framework of submarines. The firm placed their staff of artists at work immediately and commenced a strenuous inspection of several of the leading tile manufactories in an endeavor to locate an American plant capable of producing the necessary material to complete the work according to original plans.

Two were eventually found, where, with his own knowledge of the processes which he had gathered from abroad, Charles F. Lorenzen, of Chicago, was able to work out in an American pottery a tile that was more desirable than the ones originally selected, and which were made by the Dutch and German manufacturers.

The designs worked out and set in the walls of the Dutch Grill of the New Morrison Hotel can and should serve as a long and lasting tribute to what American enterprise can accomplish under pressure of necessity. The hotel lobby at once creates an impression of refinement and is a very fitting introduction to the guest who enters the grill room to which it leads.

The first object to meet the eye in the dining-room is a large mural decoration of a scene near Antwerp, in blue and white tile, depicting a family of Hollanders in the

fields on the shores of the ocean with a sail-boat, clouds, windmill and farm houses in the distance. This is really the masterpiece of the room and the finish is as clear and beautiful as any foreign tile could produce.

The grill room is also known as the "Neutral" Room, the new appellation being applied not only because of the Dutch effect, but as "Harry" Moir announced, "The neutrality is further preserved by the presence of English oak pillars, German silver light fixtures, Italian marble and French draperies." The wall design is completed with small panels of blue and white satin finished faience tile which depict cubist scenes in the peaceable land of windmills, cedar moccasins and interned armies.

The same color scheme is to be found in the mat finish flint tiling six inches by six inches which is used in the construction of the entire floor. The tables are of both square and round shapes and the table tops are constructed so as to harmonize with the general effect, with satin finish blue and white, three by three tile.

The bases of the English oak pillars are extremely original and striking in the specially molded Ohio flint tile which was used in their construction and are entirely in white. And to finish the color and tile idea, to harmonize completely with the appearance of the room, in fact, to just about meet with one's expectations, the large canopied spit that is located on the right wall from the entrance, assuredly serves its purpose. The spit idea is quaint and suggests the days when there were no twenty-one-story hotels and when the guest of an inn brought in his game fresh from the kill and watched it roast on the fireplace.

In the Dutch Grill the guest can see the appetizing roasts and the chef may be seen serving directly to the tables. The spit, of course, is completed with tile wherever it was possible to carry out the uniformity of the room, and in the canopy will be found the same blue and white satin finished faience tile used in the smaller panels throughout the grill walls.

Leaving the grill room on a tour of inspection, the visitor finds that the entire hotel has been planned with the idea of comfort, sanitary and cleanly appearance and durability, and wherever he steps the finest of tile work appears. The shower and tub bath rooms suggest to one an air of substantiability and cleanliness and will probably maintain their appearance for many years to come, for they are constructed with tile.

The old adage advising that we are better off to eat hotel food without investigation of the kitchen, may be buried forever if all hotels and restaurant kitchens will in the future be constructed in tile as is the banquet kitchen of the New Morrison Hotel, for the clean appearance is in itself an invitation to order a meal. The service bars and ice boxes, also constructed in tile, are in complete harmony with the sensible and beautiful plans carried throughout the building, and in each instance appears a fine example of American made tile.

An innovation will be found in the dancing hall where the floor is constructed of Bismarck pattern black and white, eighteen by eighteen tile and the appearance, as can be imagined, is one of refinement in addition to suggesting a very comfortable hall for summer use. It is doubtless safe to prophesy that the dance hall will be very popular during both winter and summer.

It is, in all, a remarkable display of what can be accomplished in America. The tile ordered from Holland and Germany has been successfully reproduced and improved upon by American makers in Zanesville and Cincinnati, Ohio. The spirit displayed, the ingenuity used and the results accomplished should be an incentive to all manufacturers who labor under the delusion that foreign merchandise cannot be equalled in our country.

The clothiers have talked of selling only black and blue clothes this spring, the toy stores have been at a total loss to fill their orders, the perfume manufacturers, pharmacists, woolen mills and many others have been sitting idle on the basis that "it can't be done".

Yet it is being done, in one line of endeavor after another. And with its accomplishment comes the knowledge that, while we are "reproducing", here, in this land of Peace, the goods that we previously imported, our "reproductions" exceed, in the fineness of their finish and design, those that previously came to us through the Custom House.

So the "Made in the U. S. A." movement is well under way, and an impetus has been given the tile-makers of America. The first history of this impetus is written, we believe, in the blue and white walls of the New Hotel Morrison, in Chicago—a tribute to the resourcefulness of Charles F. Lorenzen, one of Chicago's leading citizens, and to the tile-makers of Zanesville and Cincinnati, Ohio, than whom there are no better in the world.



An Interior View of the Dutch Grill Room Which Shows How Profusely Has Been the Use of Tile in Its Construction. In the Walls, on the Floor and Even in the Table Tops, Tile is the Prevailing Material

Burned Clay vs. Lumber

A Forecast of the Evidence and Defense in a Case that will Shortly Come Before the Court of Public Opinion

MUCH HAS BEEN WRITTEN about the economy of building with brick—the reduced repairs, the saving in fuel, and several other items. Very little has been said about the saving in insurance. The greater security from fire has been told, but never reduced to figures. The following article, written by fire-insurance experts, is the first of a series, in which will be outlined the case of the lumber men and, it is hoped, of the manufacturers of burned clay.

By Gardner Read and E. Winfield Day

THE FIRST THOUGHT that strikes the average man, as he reads of the proposed educational campaign of the brick manufacturers, is that it cannot fail to bring results—not only in the increased demand for brick and other burned clay building materials, but in the lessening of the fire hazard.

So every individual in the body politic gains from the expenditure of a sum based, it is said, on two cents per thousand, on the number of building brick produced in this country in 1913.

The manufacturers of brick were, it seems, just in time. Almost with them, and surely within a few days after the brick men had convened, the lumber interests made preparations to spend a sum that is equal to, if not greater, than the amount the brick men aim to devote to a campaign that could almost be called altruistic.

For, since dried wood burns easily, and burned clay, having withstood temperatures higher than those developed by ordinary conflagrations, is proven the best of fire-resistants, a propaganda for frame-building construction must be based on selfishness, rather than on reason, and one for burned clay construction on reason rather than on selfishness.

Admitted that there is a selfish motive behind each of these movements, or educational campaigns, it might be well to call in a wholly disinterested on-looker. This man is not connected with either industry—nor is he at either of the extremes of citizenship. He is neither a "poor working man," as typified by the square paper hat, nor a plutocrat, with dollar signs in the large plaids that ornament his clothes. In short, he is an employe of the fire department—in any city.

His business is to fight fire. In the daily conduct of that business he has a splendid chance to observe the manner in which fire acts. He knows the kind of food that fire eats. He knows the weak places in the fire-resisting armor. He knows just the way that armor makes it possible for him—the fireman—to take a final stand which, eventually, gives him mastery over anything but a most unusual conflagration.

Ask this fireman what kind of construction he thinks is best and he will say "Brick, or hollow tile." Ask him "Best for what?" and he will answer "For saving property and saving lives." You see—he owns neither a saw-mill, a lumber yard, a brick plant nor a cement factory. But he knows all about fires.

And, going a little farther, you might show him the outlines of that propaganda of the lumber men, as outlined in the editorial pages of this magazine, in the March 2 issue. Our fire fighter will laugh—and ask you what they mean by a "compilation of fire losses, insurance rates and building codes." For he knows that every *fair* compilation of fire losses will show a frightfully large proportion of loss sustained by wooden structures. That insurance companies, by the very act of charging almost three times as much on frame structures as on brick, are saying *"We have found the 'fire hazard' (which is the possibility of fire) three times as great in a frame building as in one with brick walls."* That building codes excluding frame dwelling construction are very hard to put through a city council, on account of the activity of the lumber men, and that when one does pass, it is generally at the beginning of a "reform" administration, elected on a fusion ticket.

Yet "the compilation of fire losses, insurance rates and building codes" is the first work that the lumber men will take up, after they have raised the first $50,000 of their campaign fund.

Now for what purpose is that compilation? Is it to furnish a basis for a well prepared argument *against the proposition that wood burns?*

Or, will it take the form of a cuttle-fish argument, which would serve to dull the mental vision of the reader? For instance, it may say that "every building material burns"—with a glance at the Edison concrete fire.

And, following this up, it may prove that the country sustains a greater loss from fire in brick buildings than it does from fires in frame structures. It may attempt this—and as it will be the first to investigate this particular point—it may be able to get some figures that will look fine—to a man who owns a saw-mill or a lumber-yard.

The facts, as the lumber men would publish them, would not state that *just as soon as he has finished thinking of his family, the American business man grows very careful of his belongings, and puts the most valuable in buildings that are reasonably fire-resistant.* They would not lay too much emphasis on the fact that, in a storage warehouse, for instance, would be the contents of a hundred homes, and, since *loss on contents* in a frame house is generally as great as the loss on the structure itself, the *contents* of that warehouse *would be worth fifty frame houses and their contents.* Yet that storage warehouse, burned to the ground, so far as floors and inner construction were concerned, and the brick walls left standing—intact, as they say at West Orange—would register a fire loss *in money*, as great as one that left fifty families homeless.

When the lumber men begin the tabulation of insurance rates, they will find that the publication of them would not serve lumber any great purpose. The brick manufacturer has never claimed that insurance rates were in his favor. He has believed, on the contrary, that since the danger of fire in a frame house was so great, the insurance companies shoul l

put a rate on frame houses that would discourage anyone's building them. In point of fact, the insurance companies do nothing of the kind.

For instance, let us take a row of ten, one-story frame dwellings, with shingle roofs, and standing ten feet apart; they cost, say, $2,000 each, to build. In every probability, these houses will be insured up to their full cost, at least for the first two or three years or *until the natural depreciation on a frame house in so apparent, as to make a lower amount on insurance represent a real value.* The rate on the two end buildings would be 60 cents per hundred, and on the inside eight, 75 cents per hundred. The total annual premium on the ten frame houses would be $144, while the annual premium on all ten of the brick houses would be $54.

Still another point, in this matter of insurance, is that the *contents* of these frame houses will carry the higher rate of insurance. Consequently, figuring that each of the families living in the houses had $1,000 worth of household goods, the insurance premium paid by all of those who lived in the frame houses, would be $52 a year. Those who lived in the brick houses, would pay $27 yearly.

Now, since the great argument of the lumber men, against the extension of the fire-limits, is that it prevents the poor man from owning his own home, (the point being that he cannot afford to build in brick, but can afford to build in frame) let us make some comparisons of what frame construction does *to* (not for) the "poor laboring man."

Brick men say that a small frame house can be reproduced in brick for an advance of ten per cent. Let us, to avoid argument, say that it can be reproduced for an advance of twenty-five per cent. If the frame houses burn, the chances are that they will be a "total loss" and, consequently, caution suggests that they be insured to their full original value. The brick houses, on the contrary, are apt to be but partially damaged, in case of fire, and as a consequence, good business principles allow the insurance of these brick houses and their contents at eighty per cent of their original valuation.

Ten Frame Houses, Costing $2,000 each, or $20,000

Yearly insurance premium on all ten houses	$144.00
Yearly insurance premium on $1,000 worth of household goods in each house	72.00
Total insurance tax	$216.00

Ten Brick Houses, Costing $2,500 Each, or $25,000.

Yearly insurance premium on 80% of $25,000	$54.00
Yearly insurance premium on 80% of the $1,000 worth of household goods in each house	21.60
Total insurance tax	$75.60

On the other hand, let us see what the building of brick houses will do *for* (not to) the wiser "working man."

No one will deny the fact that it is comparatively easy to place a larger mortgage on a brick house than on one built of wood—*surely as much as the additional cost of brick construction.* In this case, the builder of the brick house need put no more of his own money into the building of his house, than he would if he built it of frame. The additional $500 will cost him $30 a year, in interest, the latter being figured at six per cent. Since there is a difference of $140.40 in the insurance premiums paid on the ten brick houses, as compared to the ten frame houses, then each owner of a brick house saves $14.04 each year, in insurance premiums.

This amount, deducted from the $30 additional interest on the mortgage, leaves $15.96 additional cost to him each year, for the privilege of owning and living in a brick house, *which the insurance underwriters have said is only one-third as apt to catch fire, as one of frame.* That is, the amount of premiums charged is about one-third as much.

Surely even the "poorest" of "poor working men" can afford $1.30 a month for the greater security from fire.

Now as to building codes. The reason for these is to prevent dangerous building. They have application to the manner of construction as well as to the material employed. They aim to prevent loss of life—not only the lives of those who are to occupy the buildings, but those who are exposed to the danger of loss of life through proximity to buildings that are apt burn, or collapse from structural defects. It would appear that the lumber men would find little comfort from the study of these codes, which, as they forbid the use of inflammable materials, list wood in almost every form as one of the most dangerous of structural commodities. *Practically every building code in the country is a public arraignment of wood as a building material.* Every time a municipality creates or extends "fire limits," it goes on record as against every claim made by the lumber men that wood will not burn.

So the first work of the "Department of Trade Expansion" in the National Lumber Manufacturers' Association will not gain much for the men behind the $200,000 publicity fund, unless, by securing figures that no one else has tried to gather, they can so juggle them, as to make a *primâ facie* case for their product.

In the next article in this series, we will suggest a way in which the manufacturers of clay products can secure the very figures that the lumber men use, and be ready with the right information to refute the claims that lumber men will surely make.

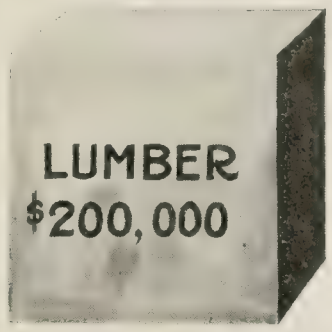


A "Build With Brick" Two l. p. Locomotive

Carl F. Kneisel, secretary and treasurer of the Sheridan Press Brick & Tile Company of Sheridan, Wyo., has found a new use for the "Build with Brick" signs, which is shown in the accompanying illustration. Not alone does this bring the subject to the notice of the adult population but also of the children, who stop on the street to read the sign. Another feature which seems to be a good one is the fact that no matter where the rider stops, the wheel continues to boost for brick to all passersby while the rider has, perhaps, gone inside the house to boost brick to the man who lives within.

Association Advertising

Comparison of the amounts spent during 1914 for publicity by organized lumber and clay products



Brick and Tile.

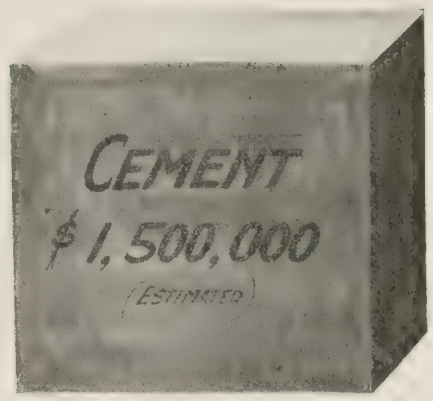
The cross indicates where the amount spent by the clayworking organizations for publicity would be if it existed.

The advertising appropriations of the lumber associations for the coming year (1915) have been placed at $400,000— double that of the previous year.

Do not these facts call for some serious consideration and then action on your part ?

BRICK and CLAY RECORD

Why Cement is so strong A Competitor



SPENT FOR ADVERTISING DURING 1914



SPENT FOR ADVERTISING DURING 1914

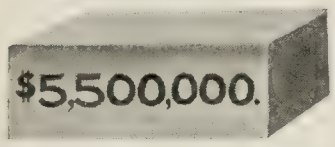
These figures, while estimated, are approximate, and represent the amount spent for advertising by individual companies in both industries.

It will be seen that cement invests about fifteen times as much as the clayworker every year in "printer's ink."
Think what this means to you in lost sales!

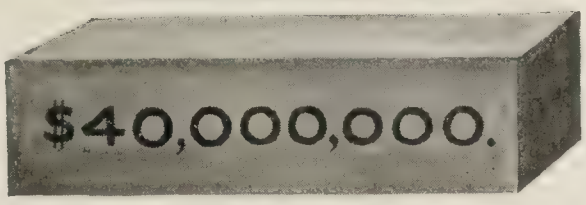
BRICK and CLAY RECORD

"Reaching the Farmer"

In one state, (Iowa) the amount expended in farm buildings in 1913 was more than seven times the total value of all burned clay products made during that year.



Value of all burned clay products made in Iowa in 1913.



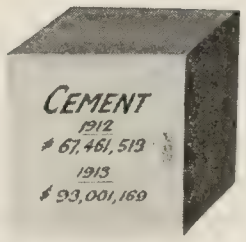
Spent for Farm Buildings in Iowa, in 1913.

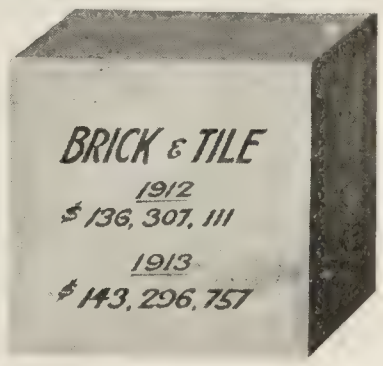
IOWA is one of the richest farming states in the country. Her farmers are building and rebuilding, with an ever increasing quantity of permanent material.

BRICK and CLAY RECORD.

Relative Value of

Clay Building Materials and Cement Produced during 1912 and 1913





From the above figures, it will be noted that the value of cement produced in this country as about half that of brick and tile in 1912.

This proportion jumped to a little less than two-thirds during 1913, as the ratio between the production of cement and of brick and tile.

Will cement pass brick and tile this year— 1915 - the year of promise ?

BRICK and CLAY RECORD

A PART OF "BRICK AND CLAY RECORD'S" EDUCATIONAL EXHIBIT AT THE N. B. M. A. CONVENTION

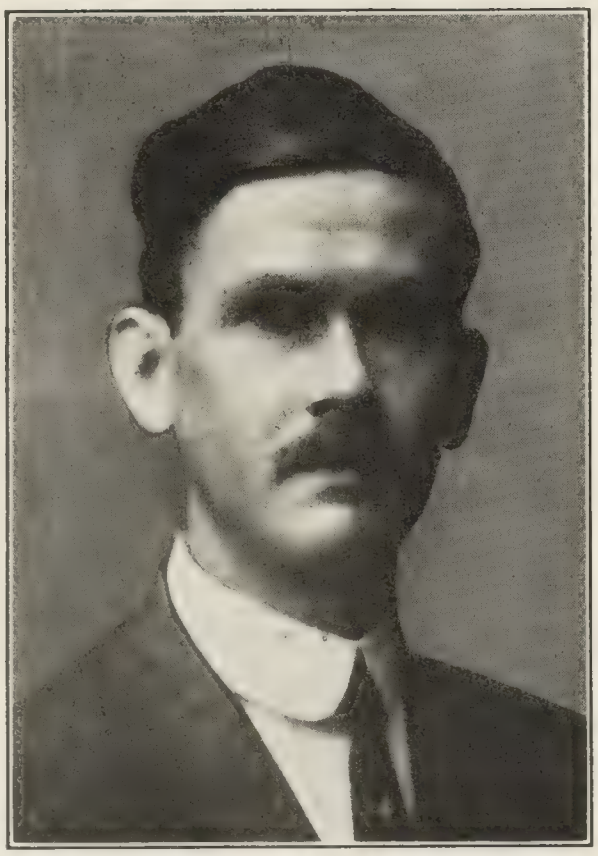
These Charts are Sixteen in Number and are in Color. Fac-Similes will be Published in Subsequent Issues of this Magazine. The Charts are the Beginning of a Larger and More Comprehensive Collection, that will be Prepared by "Brick and Clay Record" and Loaned to Clay Products Organizations for Exhibition Purposes

Kiln Expansion and Bracing

A Practical Dissertation on, and a Solution of One of the Most Vexing Problems in the Burning of Clayware

By Carl B. Harrop, E. M.
Assistant Professor, Ceramic Engineering, Ohio State University.

THIS PAPER was the sensation of the National Brick Manufacturers' Convention, recently held in Detroit, Superintendents and managers of some of the largest plants on the American continent made a point of requesting its early publication. As a consequence, its careful perusal is urged upon everyone who has to do with the burning question in a clayworking plant. The paper will be published in two installments, of which this is the first. Reprinting is forbidden, since it forms a part of the copyrighted proceedings of the N. B. M. A., and is here published by special permission of that organization.



CARL B. HARROP, E.M.

THAT the periodic heating and cooling of a kiln is responsible for the bulging and cracking of its walls, no one will likely dispute.

All structural materials expand in varying degree when heat, up to certain temperatures, is applied to them; fire-brick expand at a certain rate; common-brick at another rate; concrete and steel also have their own rates of expansion. This rate is expressed by what is termed the "coefficient of expansion," which represents the amount of elongation or lineal expansion occurring in unit length of a material for one degree rise in temperature.

Fire-brick has a coefficient of expansion of 0.0000054.
Common-brick has a coefficient of expansion of 0.0000055.
Wrought iron has a coefficient of expansion of 0.00001166.
Concrete has a coefficient of expansion of 0.00001430.

EXPANSION OF BRICK WALLS

While the expansion of a fire-brick should not vary in amount, from time to time, at a given temperature, it seems certain that there is considerable difference in the behavior of a fire-brick wall when heated up the first time and when heated up subsequently.

Suppose we consider first the newly laid fire-brick wall, taking as a specific case, one lining the side wall of a rectangular kiln and with freedom to expand in all directions. As the temperature increases in the kiln, each brick in the wall will expand a certain amount and if this lineal expansion of one brick, expressed in inches, be multiplied by the number of brick in a single course required to lay this length of wall, the product will be the total elongation occurring in the brick composing the wall under the assumed conditions.

However, the clay used as mortar in the joints will undergo a drying shrinkage of about 5%, which will provide some space for the early part of the expansion. If resistance to the movement of the wall as a whole is offered at the ends, in the forms of steel or other bracing, then further lineal expansion of the brick will be counteracted by the burning shrinkage and compression of the mortar joints.

The brick in 16 lineal feet of fire-brick wall then, when the temperature is raised 1,150 degrees C. will expand 1 3/16 inches. This expansion is partly counteracted by the drying shrinkage, but to a greater degree by the burning shrinkage and compression of the mortar joints.

It has been found from practical experience that with ⅛ inch mortar joints, a ½ inch expansion joint is sufficient for a 16-foot length of wall at a temperature of 1,150 degrees to 1,200 degrees C. This would indicate that for this temperature, the amount of compression is

$$1\frac{3}{16}\text{ inches} - \frac{1}{2}\text{ inch} = \frac{11}{16}\text{ inches or about 58\% of the expansion.}$$

When expansion joints are provided at intervals, the brickwork expands as the kiln heats up, (with possibly some slight compression of the mortar joints) until the expansion joint is closed. From this point on, if damage is to be prevented, sub-

sequent expansion must be counteracted by the same amount of compression in the joints.

If no expansion joints are purposely provided, then as the kiln heats up and expansion begins, compression of the joints must also begin immediately. This counteracting of the expansion by compression of the joints will continue until that temperature is reached, at which the compression is complete or 58 per cent of the ultimate total expansion as mentioned above. This temperature may be approximated as follows:

$$\text{Lineal expansion} = 0.0000054 \times 189.35^{*} \times \text{temp.} = \frac{11}{16} \text{ inches.}$$

Therefore, Temperature = 672° C.

The following curves will show the relative rates of expansion and compression under the two conditions just mentioned.

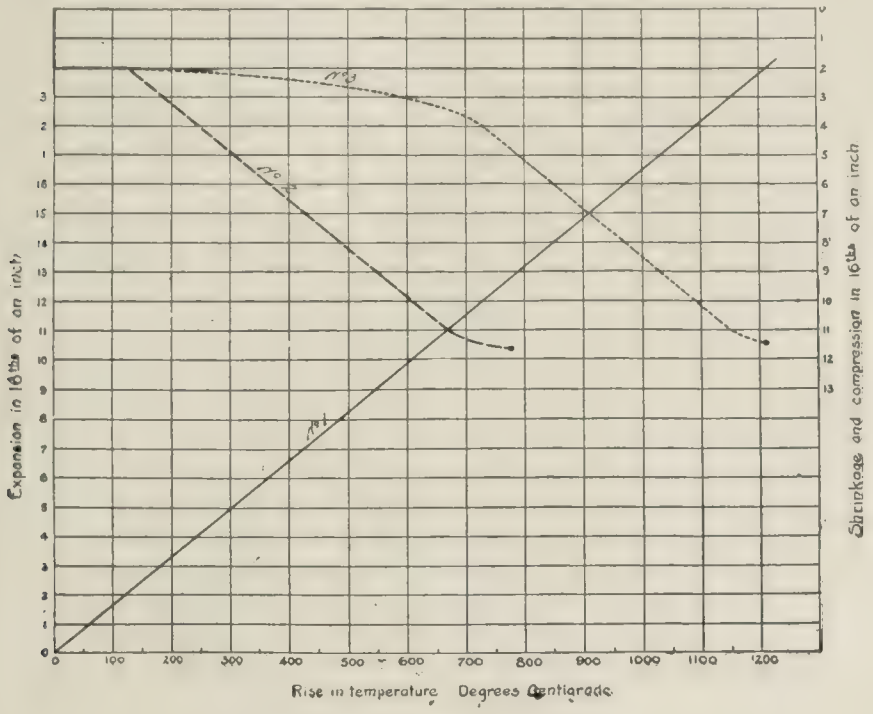


Fig. 1

No. 1 represents the expansion.

No. 2 represents compression, when there are no open expansion joints. "A" indicates probable temperature at which rupture will occur.

No. 3 represents compression when expansion joints are provided. "B" indicates probable temperature at which deformation will occur.

Considering that portion of the 9-inch fire-brick which lines a rectangular kiln from the top of the furnace arches up to the spring line of the crown, we would have a sectional area of say 48 inches by 9 inches, or 432 square inches. Cold fire-brick will stand, according to the Bureau of Standards, from 480 lbs. to 9,000 lbs. pressure per square inch. Taking 500 lbs. as a reasonable figure at 672 degrees C., the temperature at which the compression ceases to counteract the expansion, there will be, with further increase in temperature, a pressure of

$$\frac{432 \times 500}{2{,}000} = 108 \text{ tons}$$

at each end of the wall, a force which it would be impracticable to resist by any of the ordinary methods of steel bracing.

This would seem to indicate that instead of trying to prevent expansion by heavy bracing, we should make use of such methods of construction as will counteract, or at least retard the crowding action, thus lengthening the life of the kiln and reducing the expense incurred in constantly repairing damage by this inevitable expansion.

EXPANSION JOINTS

Expansion joints are often provided in the crowns of rectangular kilns and continuous chamber kilns. Figure 2 is a section showing an expansion pocket in the end wall of a rectangular kiln into which the crown can expand. This prevents, however, any rising and falling of the crown at this point, and damage to the crown will result.

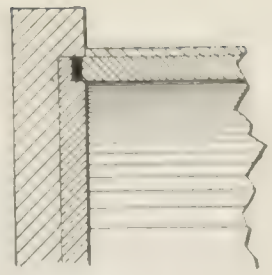


Fig. 2

Figure 3 shows a much better form of expansion joint for the end of the crown. In this case the crown can rise and fall without damage.

Figure 4 illustrates in plan, an expansion pocket in the end wall of a rectangular kiln, to accommodate the lengthening of the side wall.

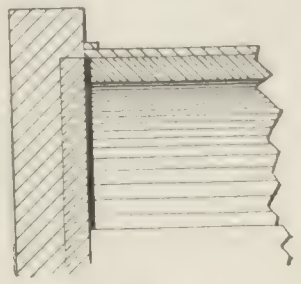


Fig. 3

In Figure 5, the same kind of a provision is made for the expansion of a flash wall in a continuous chamber kiln.

Figure 6 is a section through the side wall of a kiln, showing the proper method of preventing damage to kiln walls by the expanding floor and flue walls.

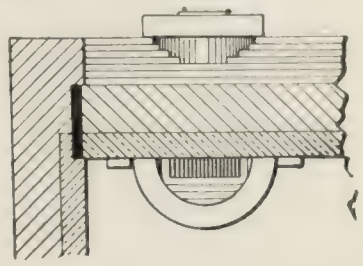


Fig. 4

Figure 7 represents a plan view of the expansion joints provided in the floor flue walls of a two-side fired continuous chamber kiln. The dotted lines indicate the position of the partition wall between the chambers above.

In Figure 8 is shown the plan and elevation of a flue wall with a better form of expansion joint. These joints may be made small and placed at comparatively small intervals, making a number of short lengths, each with a neutral or stationary center. To carry this idea a little farther, it would be ideal if every vertical mortar joint could be an expansion joint, each brick maintaining its location with relation to the other brick—expanding and contracting about its own center.

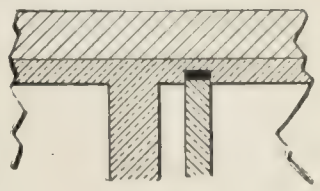


Fig. 5

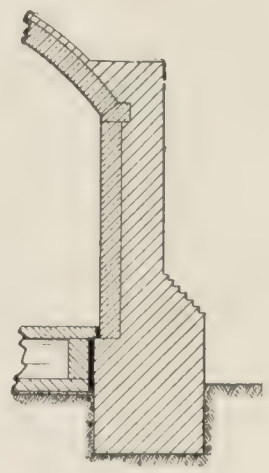


Fig. 6

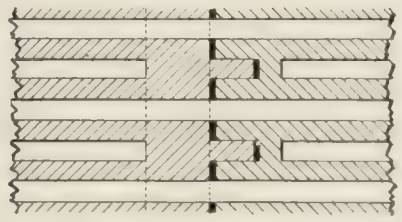


Fig. 7

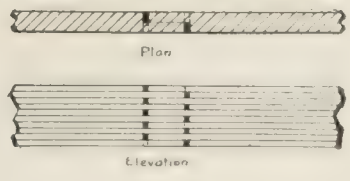


Fig. 8

While the conditions covered in this last idea never hold true, yet it is believed that it is the correct principle.

VERTICAL MORTAR JOINTS

The vertical joints should be made heavy enough so that on being compressed they will accommodate the expansion of the two adjacent brick. In this way there will be no strain set up in the wall by each one of its component brick as an expanding unit and, therefore, there will be no accumulation at the ends of the wall, of increments of expansion and consequent pressure.

*16 ft. 2⅝ inches mortar joints, expressed in inches.



Fig. 9

Kiln specifications usually state that the fire-brick shall be dipped in a thin fire-clay mortar and hammered into position. The mortar joints produced in this way are usually about ⅛ inch thick.

While this thickness is probably satisfactory for the horizontal joints, it would seem that the vertical joints should be somewhat thicker, at least 3/16 inch and possibly more. This thickness of joint should afford enough compression to take care of the expansion of the brick.

Let us assume that the vertical mortar joints in a 30-foot diameter round kiln have no appreciable thickness. The fire brick in the lining are touching, end to end. The possible compression in the joints will be practically nothing.

Assuming that we have, on the outside of the kiln, a steel band 24 inches wide, and assuming a 27-inch wall with a lining 9 inches thick, this lining will heat first, and considering the expansion in this part of the wall only, there will be a compression section of 24 inches by 9 inches or 216 square inches. As the temperature rises in the kiln, this brickwork expands, setting up compression with itself and also tension in the steel band. Thus, we have a ring of brick being expanded by heat and an encircling steel band opposing this expansion.

Neglecting the elasticity in the brickwork and in the band, as the temperature continues to increase, there shortly arises a condition which calls for a crushing of the brickwork or the breaking of the band. If we wish a band which cannot be broken by the expansion of the brickwork, it can be readily calculated.

If the brick will stand 500 pounds compression per square inch, then,

$$216\times500=108{,}000 \text{ pounds compression in wall or tension in the steel band.}$$

$$\frac{108{,}000}{16{,}000}=6.75 \text{ square inches steel with tensile strength 16,000 pounds per square inch}$$

and

$$\frac{6.75}{24}=28 \text{ inches thickness of band required.}$$

Suppose there is no band on the outside of the kiln and we raise the temperature 1,100 degrees C., then the increase in circumference of the inside of the kiln will be

$$0.0000054\times\text{circumference of kiln in inches}\times1{,}100=6\tfrac{3}{4} \text{ inches.}$$

This would cause every course in the outside wall to open up a total of 7½ inches, which would probably be divided up between a number of smaller openings or cracks. While round kilns undoubtedly are affected in this way, they are never affected to such a degree as to give ground for the claim that compression of the mortar joints actually takes place and that mortar joints of ample thickness should be provided to take care of practically all this expansion.

HORIZONTAL MORTAR JOINTS

Attention might be called here to the fact that if the horizontal mortar joints are too thick, there are apt to be disastrous results. During the spring of 1914, several rectangular kilns were built in which the 9-inch fire-brick lining was bonded entirely through the wall every fourth course (i. e., one course of headers to three courses of stretchers).

After one or two burns, the stretcher courses settled down onto the supporting header courses, leaning dangerously far away from the wall, with long sections threatening to fall to the floor.

As the kilns were used for flashing, it would probably have been safer to have bonded the lining into the main wall every third or even every second course, although the real cause of the trouble in this instance was undoubtedly the fact that the horizontal mortar joints were too thick and the corresponding shrinkage so great that when the kiln was allowed to cool, there was not sufficient vertical pressure on these brick to hold them in place. The result was that each of the three courses supported on the header course, had a tendency to draw in toward the highly heated contents of the kiln.

BONDING

The German practice in kiln wall construction is to use the Flemish bond, i. e., alternate headers and stretchers in every course. In this country, bonding every fifth or even every seventh course is customary.

Realizing that the lining of a kiln is subjected to a higher temperature and, therefore, expands more than the main wall to which it is tied, it is the belief of some kiln builders that the lining should be left separate from the main wall and with even a small air space between. The reason for this stand is that when removing parts of the linings from kilns, even those which had been fired only a few times, it was often found that every header course had been sheared off, as if cut with a knife, by reason of greater expansion in the lining than in the main wall.

While such construction may be practicable in a round kiln under burning conditions which are not severe, it could be given but little consideration in the building of a rectangular kiln, unless the lining be very thick or where special construction be employed, such as pilaster, etc. The probable cause of the shearing off of the headers in most instances is undoubtedly due to an insufficient number of header courses.

CONTRACTION OF BRICK WALLS

Thus far, only the heating up or expansion of a kiln has been considered. Let us proceed further with the side wall of the rectangular kiln and see what happens when it cools.

If the wall as a whole has expanded somewhat lengthwise,



Fig. 10

then, when the kiln cools down, the parts of the wall which have been pushed or crowded towards the ends will not necessarily recede to their original positions, because the wall, being built of units of small size (which do not become thoroughly cemented together by the action of the heat on the mortar) does not possess the ability of pulling itself as a solid mass back into its original position, unless there be considerable pressure applied at the ends.

Seldom does the wall recede as a unit, but certain places manifest themselves at stationary centers, with sections of the wall on each side contracting and drawing towards these centers. The usual result is the appearance of vertical cracks, indicating the dividing lines between the several sections.

If joints of sufficient size to take care of the expansion are left between the brick and there results no lengthwise movement of the whole wall, these same vertical or zigzag cracks will appear upon cooling, with the absence, in this case however, of "crowding out" or damage at the ends of the wall.

It will be seen, therefor, that when a kiln has been cooled down after the first firing, it contains within its walls, expansion joints, which theoretically should prevent any damage from expansion during subsequent burns. However, this is not the case in practice, as the damage occurs persistently with the continued use of the kiln.

DAMAGE TO WALLS

It has been often said that poor fire-brick laying is responsible for the greater part of kiln repair costs. Thick horizontal mortar joints, unevenly filled; loosely laid backing-up brick; large quantities of mortar and brick chips used to fill up the voids in the wall, all play an important part in the life of a kiln.

As the joints open up in the cooling kiln, small pieces of hardened mortar and chips of brick fall into the openings When the kiln is again heated up, the spaces left by the contracting brickwork have been more or less filled up, not as previously—by soft compressible, unburned clay mortar—but by hard, dense material. As the brick expand, pressure is exerted on this filling material and it does not crush, the expansion is transmitted to adjacent brick and there occurs an endwise movement of the wall, a buckling or bulging and cracking of the wall, or, in the case of the round kiln, a crowding out of the wall, resulting in the opening up of vertical cracks and an increased circumference. Figure 9 shows a round kiln in which the wall has crowded out below the band a distance of fully ten inches.

This action goes on in all parts of the kiln—side walls, flue walls and floor. It takes place at every burn, only to a very slight degree to be sure, in some cases, but in others to a considerable degree. If a kiln has been carefully built

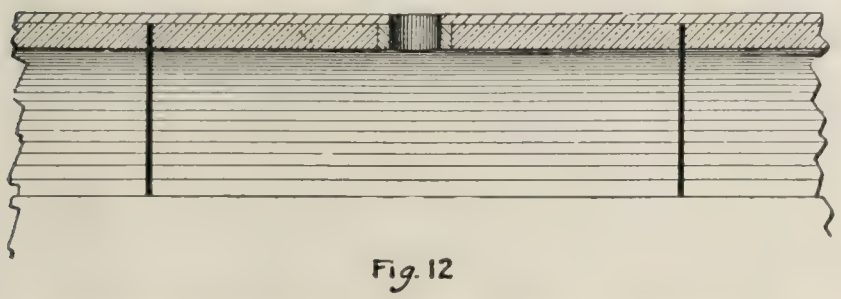


Fig. 12

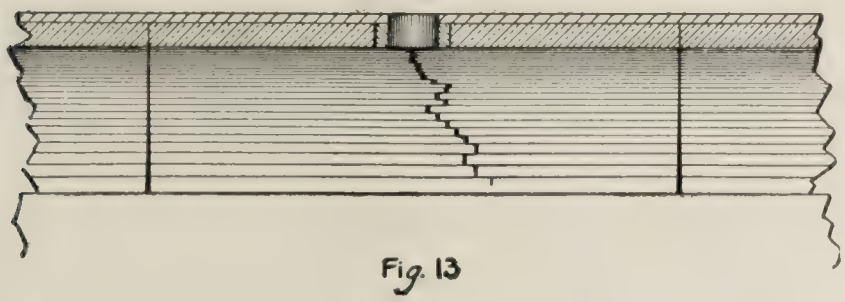


Fig. 13

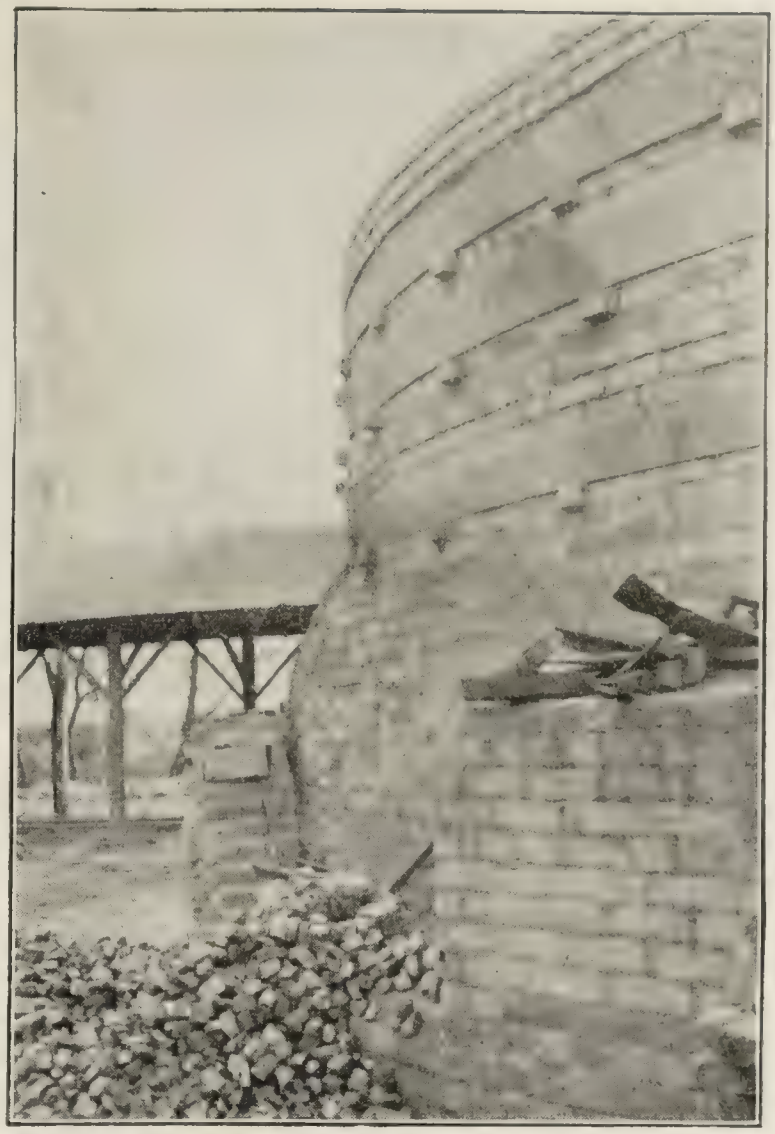


Fig. 11

with whole sound brick, well bonded and with thin horizontal joints of good fire-clay mortar, a kiln may be in use for fifteen to twenty years and still be in fairly good condition. On the other hand, if poor material and workmanship have gone into the kiln, it may be a wreck at the end of a year. Probably the greatest damage is done by the expanding of the floor. All cracks and crevices occuring in the floor when cooling, are almost immediately filled by sand and burned clay chips. When the kiln is again heated up, the floor is practically devoid of expansion joints. There can be but one result—the walls are pushed out. This performance is repeated with every burn, unless a space is provided between the floor brick and the kiln wall, giving the floor brick freedom to expand in all directions.

Figure 10 shows a rectangular kiln and Figure 11 a round kiln, which have been affected to an unusual degree by floor expansion.

There are instances when an expansion joint is made too wide. Let us consider a section of a new kiln crown 16 feet long. It has been stated that an expansion joint ½ inch wide, together with the compression in the mortar joints, will counteract the expansion in that length of wall.

Suppose that instead of the expansion joint being made ½ inch, it is made 1½ inches wide (Figure 12). When the kiln is heated up, the crown expands lengthwise, with little or no compression of the mortar joints, until the expansion joint is almost closed at the middle of the crown. When the kiln cools, no pressure is exerted at the ends of this 16-foot section, and instead of contracting and drawing as a whole towards the center of the section, a weakness shows up (Figure 13), indicated by a crack extending from the vent hole in the center down towards the heel. The section has contracted about two centers instead of one. This is not an uncommon occurrence.

(*Concluded in the April 6 issue.*)



The Brick Residence at the Panama-Pacific International Exposition at San Francisco. Photograph Taken March 4, 1915

What Are You Going to Do About It?

THE BRICKMAKERS of this country are *"not dead, but sleeping."* The lethargic coma of their present condition is almost death-like, but they *can* be resurrected, revivified and made a vital force by *co-operative advertising.*

The *lumbermen* have formed, in Chicago, the National Forest Products Association for the purpose of increasing the use of lumber by legislation, education and other methods of publicity. They have agreed to an assessment on sales that will produce a revenue of $200,000 a year for *five years*—or $1,000,000.

The *cement* interests, we understand, are assessing themselves one-half-cent per barrel for publicity work, which gives them an annual fund of approximately $375,000.

The *brickmaker* is putting up *comparatively nothing.* No wonder the cement and lumber interests are walking away with the business the brickmaker should have and are very likely to get more if the brickmaker doesn't *wake up.*

Here is a very beautiful little house—built of brick—at the Panama-Pacific International Exposition, for the purpose of bringing to the attention of the home-builders the artistic beauty of a small brick house and to show its very small cost, in every section of the country. We have asked your support in financing this publicity movement with the result that this *great brickmaking industry* has contributed $5,000, of which the Chicago dealers and brickmakers, alone, have contributed $3,000—leaving $2,000 put in by a few other men who make and sell brick in cities other than Chicago.

As shown in the above illustration, the house is well on its way to completion. Within a stone's throw from it, is the bungalow that is being built by the California Red Wood Association. This red wood house will cost $15,000, and it is creditably reported that the Red Wood Association had no difficulty at all, in raising the amount necessary to build it—to equip it—to maintain it and make it a show place, in which the beauties of red wood will be demonstrated to millions of visitors.

These same red wood people contributed the interior wood trim for the brick house that is shown in the accompanying illustration. The trim, it is said, is worth $1,000. The red wood people made so little noise about giving that trim for *nothing* that it looks as though the red wood people—unlike the brickmakers—seem to think that the Panama-Pacific house proposition is good advertising.

To the brickmakers of the country, the men who have built this brick house have some rather emphatic words to say—words that must be said, if this entire project is *to be kept from going the way of practically every other attempt at co-operative publicity attempted by the makers of brick.*

Unless you go right down in your pockets—now—and put up the money necessary to pay for a caretaker, for the repairs made necessary by an army of sightseers tramping through this house—for the literature that should be distributed in this house—it will stand, *closed*—a monument to the stinginess of American brickmakers.

The only answer that can be made to those who ask why it is not exhibited will be the truthful one—which is that brickmakers couldn't raise the money to carry out the plan they had started.

Or—there is another way. The red wood people, or some other lumber concern will pay, perhaps, $25,000 rental—and use the house for the distribution of lumber literature!

Why don't *you* loosen up? Haven't you confidence enough in the Chicago men who are backing this scheme solely for the good of the industry and to show their appreciation of the good that was done for *them* by the two clay shows, held in their city?

Can you not see that the interest aroused in this house through the visits of thousands of people from every state in the Union is going to benefit you? We must have money to reap the benefit from this house. We must have some money *now.*

How many of you brickmakers, brick-dealers and machinery manufacturers are sufficiently interested in increasing your own business to agree to put up *ten dollars?* Think of it, only *ten dollars* a month for eight months to insure proper exploitation of this house. *Loosen up* and send us your checks for ten dollars and your promise to pay ten dollars more each month until the *close of the Exposition.* We must have at least a hundred to give this sum; we ought to have a *thousand.*

Here you are, talking about the $180,000 a year you are *going to raise,* and, at the same time, letting a publicity project in which you have already invested $5,000 *go to smash* because you cannot raise $5,000 to $8,000 more.

Read "Meeting Competition"—an article that is published on page 560, of this issue of "Brick and Clay Record." It is from the pen of a man who understands you, perfectly.

Reaching the Farmer

The Eighth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XVIII.

Advertising Burned Clay for Farm Buildings

IN THE ADVERTISING of burned clay for barns and the smaller farm buildings, we have a problem that is different from any that has been discussed in these articles. It has been shown that bureau advertising for drain tile should be largely educational—we must convince the farmer that he needs better drainage to secure a maximum crop yield from his soil. It has been pointed out that strong "copy," setting forth the merits of burned clay for silos, should bring the largest number of inquiries from the prospective silo builder. But to create a larger demand for clay products in the construction of farm buildings will require an entirely different line of attack from that for either drain tile or silo blocks.

Ever since the first farm was planted in this fair country there have been farm buildings. One of the prime needs of our earliest farmers was a shelter for their crops. Like their houses, their first barns were constructed of logs—sometimes rough and very often crudely planed with an axe to make a more air-tight wall. As saw-mills were established, a better grade of dressed lumber was obtainable, and so better barns were built.

The American farmer has made a wonderful advance in farming methods since the days of the Pilgrims. In the field, in the orchard, in the dairy, in the barnyard and in his home, he has progressed to a remarkable degree in efficiency. In nearly all the departments of his farm he has advanced, *but he is still constructing most of his buildings of wood—the material of his forefathers.*

There are good reasons for this fact. Farming has not always been as profitable as it is at the present time. Antiquated methods of cultivation and farm management did not bring the profits that modern methods are producing. But as the farmer has been receiving these added profits, he has been putting them back into the soil and into a larger number of cattle. He has not considered that his buildings were much of an aid in increasing his wealth. He has, therefore, given them but little attention, beyond the few repairs necessary to keep them from falling apart.

To be brief, the farmer has not advanced in building construction—first, because he did not have the money, and—second, because he did not believe that better buildings were necessary to increase the producing power of his farm.

The first factor—that of the lack of ready cash in the pocket of the farmer—does not enter into the preparation of advertising "copy" for farm buildings at the present time, although it largely determines the best time to advertise in the marketing of burned clay for that class of structures.

In the second factor we find our real problem and the one to which we should give the most thought.

A certain Illinois farmer owned what might be called a fair sized farm. By the proper rotation of his crops and good cultivation, he managed to keep things going and, after several years of good, hard labor, with not a small amount of worry, he succeeded in paying off a mortgage that he had signed when he bought the farm. He had a small herd, a number of old sows and a large brood of chickens. His stock would have paid him a good profit and turned what seemed to be a life of struggle to one of happiness and wealth, if he had but given the proper attention to his farm buildings.

His barn was built of frame which, by constant patching, he had been able to keep together. He failed to take into consideration the effect of poor shelter on the milk-producing powers of his cows. He looked forward to winter with a certain dread, because he knew it meant a curtailed supply of milk with a corresponding decrease in the butter he would be able to get from his churns.

He often bemoaned the fact that his cattle cost him more to feed during the cold months than he could ever hope to recover in the sale of his dairy products.

The same was true of his hog house. He believed, as do many other farmers, that most anything is good enough for a hog. As a consequence his hog house was ill-constructed, ill-ventilated, dark and cold, a very unfit place for the breeding of pigs. Experience taught him that he could only expect to get one litter each year from his sows. He had tried to get two, but his loss was so great from the little pigs catching cold, that he gave up this practice in despair. Yet he never thought of building a sanitary, well ventilated, sunny and warm house for his hogs. He never could see the economy of it.

Just when the price of eggs was the highest, the production of his hennery was the lowest. Instead of lively, cackling hens, they were standing around on frozen legs. He never could understand why his neighbor was selling fresh eggs the year around. He had always thought that the man on the next farm was some kind of a genius to obtain the results he was getting from his chickens. It had never occurred to him that a visit to that nearby farm might disclose the secret of its success—a well built chicken house.

After thirty years of hard labor, this farmer died and left his farm to the boys. His legacy was one of hard work rather than of wealth, for while the land was still there, the buildings upon it where in the last stages of decay, so much so that they could not be used much longer. New ones had to be built, and the younger generation, catching the spirit of progress, constructed permanent, fire-resistant buildings. It seemed hard, at first, to take on this added expense, but it soon came back in increased profits from the dairy, the hog pen and the hennery.

The attitude of the family about whom the above story is told prevails to a large extent among our American farmers. *His buildings are about the last thing on which he believes he ought to spend any money.* It will, therefore, be seen from the above "analysis" that our adver-

tising for farm buildings must show the farmer why he should build of burned clay. We must annihilate the old idea that frame is good enough. We must give the farmer *economic reasons* why he should use permanent materials, and construct permanent buildings.

CHAPTER XIX.

Permanent Farm Buildings are Profit Producers

The tendency in present day farming is toward stock raising. This branch of agriculture offers good profits when rightly conducted. Silage and the meadow provide cheap feeds, and the fact that United States is the big provisioner of the world, in times of peace as well as in days of war, insures a good market for live stock.

But without the proper housing, maximum profits on the stock farm are not only highly improbable, but in most cases impossible. Agricultural authorities are emphasizing this fact, and farmers are coming to realize its truth. The march of progress toward permanent farm buildings, however, is slow, and there is much to be done in the way of education.

Dairy farms are becoming more and more numerous. This is a specialized branch of agriculture which can be made to pay satisfactory profits, if the corners are watched. The most important part of its equipment is the barn. In these days of rigid government inspection, the first necessity of the barn is that it be sanitary. The lives and health of many people depend upon the extent to which sanitation is carried out.

A material that does not make sanitary conditions easily obtainable is, therefore, of less value than one which does. The prevailing type of dairy barn is one which is constructed of frame. It has been proven that a wooden barn is not as sanitary as one built of burned clay. Moisture is the great destroyer of wood and if there is a place on the farm where moist conditions prevail, it is in the dairy and milk house.

And then there is the constant danger of fire. Hay is nearly always stored in the loft of the dairy barn and the fires that have started from that source are without number. Since the barn holds a large investment in live stock, this point is one that should receive the utmost consideration on the part of the dairyman. A barn constructed of fire-resistant material is better protection than a fire-insurance policy.

The producing power of the cows is in direct proportion to the warmth of the building in which they are sheltered. A barn in which the temperature is normal will greatly increase the production of milk, whereas a cold, drafty barn will have the opposite result. Burned clay makes a building in which the proper temperature can be obtained and maintained with the least possible effort and is therefore superior to frame and even concrete, which has a tendency to be cold and damp.

While many farmers have improved their barns, their hog houses have been criminally neglected. In many cases, a good barn has been erected before even the farm house has received the proper attention. But the theory that the barn will keep the house, while the house will not keep the barn, does not seem to work when applied to the construction of a better hog house. This building, above all, should have plenty of sunlight and ventilation. These factors promote sanitary conditions and warmth. Sunlight is the greatest enemy of hog cholera and a warm house is the best environment for the raising of little pigs.

Farm buildings that will last for generations—

Buildings that will be practically good as new—still in use by your son's sons *50 years to come.*

And—here is a *remarkable* fact—such buildings can be—*are* being *erected at practically the same cost as frame buildings!*

Note what U.S. Dept. Agriculture Says About Farm Buildings Built of Hollow Clay Blocks:

"Hollow tile * * * this construction is well adapted to *any* farm building * * * double walls and good insulation * * * *at a price comparing favorably with wood.*"

—Farmers' Bulletin No. 574. April 7, 1914.

Barns—hog houses—poultry houses—stables built of the material growing so fast in farmers' favor—***vitrified hollow clay building blocks.***

Fireproof—moisture proof—frost proof—storm proof yes, ***tornado*** proof farm buildings. No painting necessary. No rotting possible. Cost of maintenance ***next to nothing.***

Vitrified hollow clay barns keep stock more comfortable at *all* seasons. Actually effect savings in feed because they keep the stock warmer in winter. Such barns add tremendously to the farm's appearance—to its efficiency—to its ready, marketable value.

Hog houses of this splendid material afford better protection to the hogs—big and little. Enable you to have sows commence farrowing March 1. Make it possible to ***successfully raise 2 litters every year.*** And have pigs finished ready for market ***early in the fall***—when ***top prices prevail.***

Poultry houses made of the same material actually increase the yield of the flock. Afford greater protection to winter hatches.

Every progressive farmer—every farmer keen on making more money out of his farm—should read and heed the truths told in

The book on hollow tile farm buildings

—a copy of which we will gladly send on request. ***You*** should read it—to learn why and how you can build such greatly superior, ***permanent*** farm buildings ***at the same cost of short-lived frame buildings.***

Send for the Free Book Today

Clay Products Publicity Bureau

Box 217 **St. Louis, Mo.**

The Third and Last Specimen Ad. for Clay Products on the Farm. Permanency, Which Has Been Taken for the Leading Thought, Is Drilled Into the Reader From the Head-Line to the Signature

Statistics gathered by the government show that progressive farmers with improved hog houses succeed in raising seven pigs out of each litter, while the vast host of unprogressives, with poorly constructed houses, only succeed in getting four pigs. Is not this waste the best kind of an argument for burned clay hog houses?

In the corn belt, however, where a large part of this crop is marketed through hogs, another factor is presenting itself that promises to have great influence in urging the farmer to build permanent hog houses of burned clay. In Iowa, for instance, where corn is selling for sixty-five cents a bushel and hogs at six cents a pound, this feed is becoming a rather expensive one.

It is a well known fact that in a cold, dark and damp hog house, such as those constructed of wood and which are to be found by the thousand on the farms of this country, the hogs have to eat an additional ration to fight off the cold. This extra feed is becoming a very large item with corn at its present price and so the farmer is realizing that it is a good investment—one that is paying him a comfortable profit—to build a hog house of burned clay, which is warm, dry and sanitary, and where the amount of feed necessary to keep the hogs in the proper condition is not nearly so great as that necessary in a poorly constructed house.

The raising of poultry and the marketing of its products are occupying a constantly increasing amount of attention on the part of American farmers. One of the greatest problems on the farm is to keep the hens laying all of the year. With a chicken house that is poorly lighted, cold and badly ventilated, this problem is hard to solve. In order to secure maximum results from the hennery, the chickens must be properly housed. They must be given plenty of light and air and be kept comfortable. Some farmers heat their chicken houses artificially, but this is at once an item of expense and labor. In a chicken house of burned clay the heat is retained within the house by the superior construction of the walls and only in the most severe weather is any artificial heat required, and then only a small amount. Hens lay during the entire year in a house constructed of burned clay.

CHAPTER XX.

Permanency, the Best Argument for Burned Clay

The lumberman may tell you that the foregoing arguments and reasons are equally applicable to his product —wood. He may claim that he can build a dairy barn of frame that is just as sanitary as any that have or ever will be constructed of burned clay, and at a price that is much below that quoted by the mason.

The vendor of wood may tell you that he can build a hog house of frame that is equal in merit to one built of burned clay, and at a great reduction in cost. He may claim the same for his frame chicken houses and other small farm buildings.

We doubt very much that he has any advantage over burned clay in price, if his buildings be well constructed and a good grade of lumber used. *But he never can dispute the fact that time and decay limit the life of his buildings of frame to a comparatively few years.*

Permanence is the best talking point in the advertising of clay products for farm buildings. The construction of buildings that his grandchildren can inventory at a valuation that is not much below their original cost, should be a good argument to use in getting the farmer to use burned clay. Permanence is economy in the long run.

The initial cost of burned clay over even poorly constructed frame is so small that the difference in the cost of maintenance of the two types of structure will soon pay back the added expense. In many cases this can be accomplished in three years, and every year thereafter, permanent buildings of burned clay will pay a dividend on the investment.

It can readily be seen that there are a number of good reasons why the farmer should use burned clay. If in the past he has had a false idea that he could not afford these improvements, this obstacle has been removed by the bumper crops and good prices now prevailing for farm products. Efficiency on the farm is being urged on every hand, and with cash in the bank, the farmer is ready to listen to this message.

Now is the time to advertise burned clay for farm buildings. *Now* is the time to tell the farmer why he should make these much needed improvements on his farm. *Now*, when he is in the proper mood and has the means, and is ready to be told *why he should build* an asset, *not* a liability—a building that will prove a good investment and pay him dividends, rather than one which will be a constant expense for paint and repairs. The man who is making clay products for use on the farm *now* has the opportunity of a lifetime to present his message most effectively to his best customer—the farmer.

In the next article an attempt will be made to discuss the dealer's advertising campaign and how he may be made an effective means of furthering the sale of burned clay on the farm.

A Study in Contrasts



The accompanying illustration shows the old and the new in unmistakable contrast. Four horses are resting from the task of hauling a light grocery wagon through the mud. Alongside, the new brick pavement, ready for grouting, promises a roadway upon which one horse could pull the wagon, and need but little rest, especially if headed toward home. The brickmaker who sent this photograph said that at least one of these horses could see the point—can you?

With the Potteries

A Resume of the Activities of the Potters and Some Mention of Their Plans for the Future

FEDERAL STATISTICS JUST announced show that pottery imports have shown at remarkable falling off for the 12 months ending December 31. Two conditions enter largely into this decrease as a cause, the first being the European war, and the second the disturbance in domestic industrial activity. Should the imports continue to decrease, then the American pottery manufacturer will have all he can do in taking care of an increased domestic consumption.

For the twelve months ending December 31 last, the importations of china ware, porcelain and earthen ware showed a loss over the record of 1913 of $1,056,471. Taking this loss as a basic figure, it shows enough business to operate steadily at least five six-kiln plants, giving employment to hundreds of people, and creating that much increased activity in other lines. It is contended that by "watching the corners" a six-kiln plant can do about $200,000 worth of business annually. It is also pointed out that many foreign plants are now working on orders and making delivery of goods ordered before the European war started. These receipts if not augmented later, will in time drain the imports now held in warehouses, and the domestic public will be compelled to purchase American-made goods. Buying of domestic ware is bound to increase just as soon as an improvement in business conditions comes, and this is declared to be fast approaching. Jobbers are turning more to domestic goods than heretofore, and this means an increased demand upon the American pottery manufacturer.

A. E. Kleahn, of Milwaukee, Wis., one of the best known of the western pottery salesmen, became ill while working in St. Louis a few days ago and died. He was connected with the Vodrey Pottery Company, of East Liverpool, Ohio. His body was removed to Milwaukee for burial.

Sanitary pottery manufacturers in the West hold that from present indications there will be a decided improvement in business in that line this season, and they are making their plans accordingly. It is pointed out that there will be an increase in building operations this spring and summer, and that as modern sanitary fixtures are now being used in all new homes, this will reflect in the sales of the sanitary plants.

The D. E. McNicol Pottery Company, of East Liverpool, Ohio, which has been operating several kilns in the former plant of the Warner-Keffer China Company, manufacturing Rockingham and yellow ware, have transferred their operations to their own plants. The present owners of the Warner-Keffer plant are now at work forming a small company to manufacture white ware, but the lines will consist only of plates and "teas."

The trade in flower pots has opened unusually early in Kansas City, and is starting strong. The park department of the city has established greenhouses on an extensive scale. During the past month the City bought 25,000 two-inch pots from the Missouri Pottery and Mfg. Company. This company reports an increasing demand for its product.

J. P. Young, well known in Illinois as a clay expert, has secured leases and options on promising pottery clay fields in Jasper county, Missouri. Coal is now being stripped by the Mohawk Coal Company from a part of these lands which are near Ardath, eighty miles south of Kansas City. This location, near a manufacturing center, has encouraged plans for the establishment of a pottery in Kansas City, and tentative steps have been taken in this direction. It is said that a terra cotta company had ordered two carloads of the Ardath clay, but delivery was impossible because the lessee had not provided equipment for gathering the clay.

It is reported that the Guernsey Earthenware Company, of Cambridge, Ohio, will soon enter into the manufacture of a new line of ware designed for laboratory work, and to take the place of those lines which have in the past been procured only through importations from Germany. The Hall China Company, at East Liverpool, Ohio, was the first American pottery to make these lines and a very successful business has been worked up. Such ware is made from a special body and glaze, each of which withstands high temperatures. Little, if any, of this class of merchandise is being imported, American import houses having turned their business over to American potters for manufacture.

The Paden City Pottery Company, at Paden City, W. Va., which is under the management of Edward J. Owen, formerly of East Liverpool, Ohio, and who built the Owen China Company's plant at Minerva, Ohio, is about to place a new line of cooking ware on the market. New bodies and glazes have just been developed, and the ware is said to be the next thing to the vitreous cooking ware body. The capacity of this plant is soon to be increased by the erection of additional kilns.

Contracts have been awarded for the erection of an additional kiln at the plant of the Oxford Pottery Company, at Cambridge, Ohio. This concern has been in operation less than a year, but more kiln room is required immediately. Construction work has started.

Contrary to the report that the Ohio Pressed Brick Company, Zanesville, Ohio, had taken over the plant of the Ransbottom Brothers Pottery Company, Roseville, Ohio, comes the news that this rumor is entirely false and unfounded. The Ransbottom Company has not sold out its business and has no intention of doing so. An item was published in the January 5 issue of "Brick and Clay Record" which stated that the Ohio Pressed Brick Company had purchased the Ransbottom plant and intended installing new machinery for the manufacture of red roofing tile. This, however, is not the case.

Mr. Hughes, of the Zanesville Pottery Company, Zanesville, Ohio, was in Louisville recently on his return from a trip through the South. He called on the florists who are now buying fairly large quantities of flower pots, as the spring potting season is fast approaching.

The shipping of ware from the new plant of the D. E. McNicol Pottery Company, at Clarksburg, W. Va., has commenced. Two shapes of table ware are being made at this plant, one fancy and one plain. The pottery is the first to be operated in Clarksburg since the days of the Radford Pottery Company, but the latter confined its efforts entirely to the manufacture of art pottery, such as jardiniers, umbrella

(*Continued on page* 598.)

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Misses Article on Publicity

Those of our readers who followed the articles published from August 4, 1914, to November 17, 1914 inclusive, under the heading "Publicity or Free Advertising" will recall the splendid suggestions for display advertisements and reading notices that were prepared by Ralph P. Stoddard, secretary of the Society Advocating Fire Elimination. These contained, in all, eighteen advertisements and sixteen stories, any or all of which were well worth a place in the reading columns of any local daily, semi-weekly or weekly paper. Regarding them, the Riverview Fuel and Supply Company, of Freemont, Ohio, writes:

Since the first of January, we have missed the "sample advertisements" and the series of "stories" intended to supplement the display advertisements which have been a feature of "Brick and Clay Record" for several months past. This was good material, and our company was using it in a liberal way for newspaper work. Do you expect to resume this feature? It is worth the price of your paper and more, to every brickmaker, and should be kept going, as the brick men, generally, cannot prepare this material in an effective way. Please advise what your plans are for the future in this respect, *as this is the season when such advertising counts,* and not after plans for frame houses are started, in the spring.

Negotiations are now pending with a publicity man, who will, we trust, prepare a similar series. We discontinued the publication of the Stoddard series, because we could not find out that they were being used. Several times, during their publication, we asked our readers to send us clippings from local papers that had accepted the reading notices, (we had no doubt of the editors being willing to accept the advertisements, if accompanied by a properly signed check) but we received practically no response. It appeared that we were shooting at a wrong mark, and we decided to devote the space to something that would seem to have a greater value to our readers. These are points wherein our readers can help themselves by helping us, and we hope that future appeals, made with the idea of finding out whether what we are publishing has a practical value, will meet with a more generous response.

Wants to Change Size of Common Brick

The Wisconsin Brick Company, of Madison, Wis., writes, under date of Feb. 3, asking a question that has some interest for many other brickmakers. It is particularly pertinent, at the present time, in view of the remarks made by Thomas E. Wilson, of Pittsburgh, at the recent N. B. M. A. convention and reprinted in our March 2 issue. The letter from Madison reads:

We should like to ask your advice in regard to the following proposition: If you were making common brick, and found that the margin between your cost and selling price on brick was such as to make it unprofitable, and the competition in your market prevented your raising the price, would you consider the advisability of reducing the size of your brick from 8¼x4x2¼ to 8x3¾x2¼? This difference in size would work out the necessary increased margin. Most of the competition brick are smaller than our own product. We would appreciate it if you would give this matter your consideration and write us your opinion at once.

Twenty years' experience in the brick-selling game has convinced at least one of "Brick and Clay Record's staff that, if a common brick is not palpably undersized, it will take what might be called a "standard" price. Increasing its size will not add proportionately to its selling price, for the average mason, when buying brick, does not seem to figure that mortar costs him much of anything. Then, too, there is a certain advantage in a small sized common brick, since it can be used in connection with standard size face-brick, the latter in as fine joints as seem necessary to the architect and owner —the former being laid with a spread joint, which is necessarily wider.

The ideal measurements of pressed, or repressed face-brick are 8¼x4x2⅜ inches. This gives a "stretcher" that is twice as long as the "header," plus a quarter-inch joint. The height, with a quarter-inch joint, gives six courses in 16 inches (or to be more exact, 15¾ inches). The mason would, of course, work to the 16-inch height.

The backing-up brick, measuring 8x3¾x2¼, would also give a "stretcher" to two "headers," with a half-inch joint, and a height of 2¼ inches would give six courses in 16 inches, the horizontal joints being .416 of an inch in thickness, or close enough to a half-inch to take up the inequalities in thickness and shape of the backing-up brick.

In communities where it is compulsory that every sixth course be an "all header" course, these measurements of face-brick and common brick are reasonable, economical and may well be called standard.

Of course, when it comes to straight common-brick-work, the size of the brick counts, but the mason contractor seldom gives the manufacturer the full benefit of the extra size. He will use the large size of a competitive brick, to try to cut the price of the brick he wants to buy—but he will not "pay extra for large size"—that is, not as a rule.

They Find "It Pays to Advertise"

While many of us are feeling a little of the depression that comes as a shadow of the European trouble, the South feels it more, probably, than other parts of the country. So this letter, which comes from Florida, is indicative of the blight cast upon the fair Southland by

the War Lords. Under date of Jan. 2, the Tallahassee Pressed Brick Company, of Havana, Fla., writes:

The war panic has torn the brick business badly, but we have the best building material that the world ever saw, and are more than holding our own in building material. We have tried a little local advertising, in our town paper, and find that it helps us to many inquiries, and then, by following these up, we manage to secure the lion's share of what business there is.

That seems to be the story, every time. The time to advertise is when times are dull—as one man says, "the way to get business comin' your way is to get right out, and get behind it—then chase it the way you want it to go."

Never Misses Reading "Brick and Clay Record"

The hardest work attached to the publication of a technical or trade magazine, is in securing the interest of the subscribers, and being assured that they read every page. Letters like the one which follows, written by G. A. German, managing director of the Sun Brick Company, Ltd., of Toronto, Ont., is very encouraging. Mr. German writes:

Yours is one of the few papers coming to my house which I never miss reading. In fact, I might say that some of your issues I have read so often and handed around to my friends to read, that by the time I get them filed, they are pretty well worn. I am sure our staff takes as much interest in the magazine as I do, because they are continually calling up and drawing articles to Mr. Walker's or my attention, and we sometimes have great discussions on different points. To show you what assistance your paper is to us, I might state that four out of the seven of our staff who receive your paper, read papers which I think were among the best that were read at the convention of the Canadian National Clay Products Association, and that two of us were elected officers in that association.

Letters of this kind spur the editorial staff of "Brick and Clay Record" to still greater achievement, and reflect to the benefit of claycrafting, in every part of the world that this magazine reaches.

Wants "Pave With Brick" Posters and Books

Advertising burned clay products takes so many forms —all of them good—that it is not only possible, but probable, that undue emphasis is laid on some ways, more than others. So far, from our knowledge, nothing is done in a general way, to advertise paving brick, aside from the distribution of so-called "paving brick literature" which is published by the paving brick organizations, and by "Brick and Clay Record", in the form of reprints of articles published in this magazine. The suggestions made by H. C. Kenyon, superintendent of the Standard Brick Company, of Charleston, West Va., are worthy of note. He writes, under date of Feb. 9:

In the Sept. 15, 1911, issue of your magazine, you show an illustration of a brick road in Illinois, where one team is hauling five wagon-loads of corn. Now, if you could get out a poster, measuring about 18x36 inches, and on the upper half, use this photograph, enlarged, and in the lower half a photograph of a four-horse team with one single bed wagon, up to the axles in mud, and head it with the slogan "Pave with Brick" we could, I believe, use 500 or 1,000 if the cost was not too high. In your June 15, 1912, issue, you show a long stretch of brick road in Ohio. If you could get out a book showing fifty or more 7x9⅜-inch half-tones of brick roads before and after paving, and about the same number of half-tones, made from actual photographs of failures of other kinds of pavements, all printed on good, glazed paper, I believe it would sell. We for one, would take a large number of copies. The bithulithic people show photographs of mighty pretty streets and roads, and the brick manufacturers need something of the same kind. A book of photographs would be a weighty argument to have with one, when trying to get petitions signed, and to show municipal and citizen paving committees.

Both of the suggestions are pertinent. A poster of the kind suggested would be of great value, particularly if issued by the National Paving Brick Association, and issued at cost to paving brick manufacturers, to be used in connection with "lettings" where various paving materials are in competition. Poster advertising is a sort of up-in-the-air way of putting a message before the eyes of the public, but its effectiveness is undoubted. The proper use of this sort of publicity would include a contract with the local bill-poster, who would paste the posters where they would attract attention, his charge being based on the number he had to put up, and the amount of territory he had to cover.

Regarding the book of illustrations—our suggestion would be that it covered only the pictures of brick-paved roads. Very little is gained by showing pictures of "failures"—it is an indirect form of advertising the "other fellow." The thought cannot fail to come to the man to whom the book is shown that, if the "other fellow" wanted to, he could show pictures of brick "failures." Incidentally, the advertising of the interests that compete with brick have been brought to a much higher state of perfection than brick advertising, and, being controlled by advertising experts, it expends its force in showing how good the advertised material is, rather than how poor something else is, even though that "something" else is after the same contract.

Another Suggestion for Posterettes

The posterette idea has "caught on" and "Brick and Clay Record's" stamps are being sent to every corner of this great country. They have one great drawback, however—that is, that they are good advertisements for *brick*, but do not say anything about hollow-tile, or flue lining, either of which are entitled to the credit of keeping the fire-loss down to the figures that we can at least read, if not understand. This is forcibly called to our attention in a letter received from the White Hall Sewer Pipe and Stoneware Company, of Whitehall, Ill., in a letter dated Feb. 1. It reads:

Referring to your little poster enclosed with circular just received, is it possible to change the reading "Build with Brick" to "Use Flue Lining"? We do not manufacture brick, but we would like to boost our flue lining sales a little. A posterette with this inscription could be used very nicely by the sewer pipe manufacturers.

The large number of subscribers who could and would use the "Build with Brick" posterettes, made it possible to retail them at a wholesale price. We print them in 50,000 lots, and sell them at $1.50 per M. In order to secure as favorable a figure on the same stamp, with different lettering, it would be necessary to secure orders for at least 50,000. The cost would then be $75. If a larger order were placed—say 100,000, the cost would be reduced to something like $115.

"Short and Sweet"

Carl M. Stookey, president and general manager of the Edwards Brick Company, Inc., of Columbia, Mo., writes, under date of January 2, 1915:

Your letter of the 16th, in reply to my question of the 12th has been received. I have taken very kindly to your advice and I am sure that you have helped me. You are the brick makers' best friend.

Our thanks are due Mr. Stookey, who first put us under obligations, when he gave us a chance to do him a service.

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Number of Fire-Brick Required for Various Circles

Diameter of Circle	Key Brick					Arch Brick				Wedge Brick			
	No. 4	No. 3	No. 2	No. 1	Total	No. 2	No. 1	9-in.	Total	No. 2	No. 1	9-in.	Total
1 6	25	...	...	...	25	...	...	...	...	...	...	...	...
2 0	17	13	...	...	30	42	...	...	42	...	...	...	...
2 6	9	25	...	...	34	31	18	...	49	60	...	...	60
3 0	...	38	...	...	38	21	36	...	57	48	20	...	68
3 6	...	32	10	...	42	10	54	...	64	36	40	...	76
4 0	...	25	21	...	46	...	72	...	72	24	59	...	83
4 6	...	19	32	...	51	...	72	8	80	12	79	...	91
5 0	...	13	42	...	55	...	72	15	87	...	98	...	98
5 6	...	6	53	...	59	...	72	23	95	...	98	8	106
6 0	...	...	63	...	63	...	72	30	102	...	98	15	113
6 6	...	...	58	9	67	...	72	38	110	...	98	23	121
7 0	...	...	52	19	71	...	72	45	117	...	98	30	128
7 6	...	...	47	29	76	...	72	53	125	...	98	38	136
8 0	...	...	42	38	80	...	72	60	132	...	98	46	144
8 6	...	...	37	47	84	...	72	68	140	...	98	53	151
9 0	...	...	31	57	88	...	72	75	147	...	98	61	159
9 6	...	...	26	66	92	...	72	83	155	...	98	68	166
10 0	...	...	21	76	97	...	72	90	162	...	98	76	174
10 6	...	...	16	85	101	...	72	98	170	...	98	83	181
11 0	...	...	11	94	105	...	72	105	177	...	98	91	189
11 6	...	...	5	104	109	...	72	113	185	...	98	98	196
12 0	...	...	...	113	113	...	72	121	193	...	98	106	204
12 6	...	...	...	113	117	...	...	...	...	...	...	...	...

For larger circles than twelve feet use 113 No. 1 Key, and as many 9-inch brick as may be needed in addition.

Some Useful Information Concerning Fire-Brick

A nine-inch straight brick weighs seven pounds and contains one hundred cubic inches. From this it will be seen that this brick weighs one hundred and twenty pounds per cubic foot and has a specific gravity of 1.93.

One cubic foot of wall requires seventeen nine-inch brick, one cubic yard requires four hundred and sixty. Where keys, wedges and other "shapes" are used, add ten per cent in estimating the number required.

One ton of fire-clay should be sufficient to lay three thousand ordinary brick. To secure the best results, fire-brick should be laid in the same clay from which they are manufactured. It should be used as a thin paste, and not as mortar. The thinner the joint, the better the furnace wall. In ordering brick, the service for which they are required should be stated.

What a Trade-Mark Means

When a manufacturer puts his name or his trade-mark on a brick, he seeks the advantage that comes of having a good reputation, and, at the same time, stakes that reputation on the good performance of that particular brick, or shipment of brick. So he points to the past and gives a hostage for the future.

For that reason, the buying of a brick that is not branded, shifts the responsibility from the maker to the buyer, or, if the buyer deals through an agent or dealer, the latter takes some of the responsibility. Just how much the dealer does take is a question.

If a salesman misrepresents a branded brick, the buyer has recourse—he knows that the manufacturer is proud of his

product and jealous of his reputation. A protest, made over the salesman's head, to the manufacturer, will be apt to bring results. It may cost the salesman his job, but that is not nearly so important to the manufacturer as the reputation of his brick, or to the buyer as the securing of what he has paid his money for.

If the buyer is dissatisfied with the service, or the quality of a branded brick, he can put that brick on his list of things that have failed—and decide not to buy that particular kind of brick again. But where the dissatisfaction has come with a brick that bears no name or trade-mark, the man who made it is free to go right on, discrediting the industry by poor service and poor materials, until the crack of doom.

The man who stamps his name or his trade-mark in a brick is not—as some have said—"guaranteeing its quality." He does say, however, that he is ready to right any wrongs that have been done in his name.

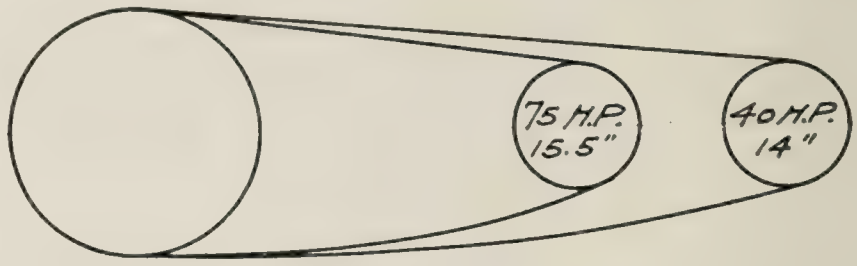
Using Two Motors on Same Drive

On page 257 of the February 2 issue of "Brick and Clay Record," I noticed an article regarding the use of two motors on the same drive.

Several years ago I had occasion to use two motors of different horsepower and speed to drive an air compressor carrying a fluctuating load, the maximum of which was one hundred and thirteen horsepower. The motors—one forty horsepower, eight hundred and twenty revolutions per minute, and the other seventy-five horsepower, six hundred and fifty revolutions per minute—were belted as shown in the accompanying illustration.

A 15.5-inch pulley on the seventy-five horsepower and a 14-inch pulley on the forty horsepower motor gave practically the same belt speed and without any slippage on the driven pulley. The two motors always carried their share of the load. Also, by installing the motors in this manner, long slack belts are permitted which require very little more room than does one motor.

With motors set as illustrated in your February 2 issue, a very short belt is necessary, as there is usually very little room between the driving and the driven pulleys. Where a short belt is used it must be kept tight, with a consequent strain on all bearings and an added load on the motors. If



the belt is allowed to become slack, a slip results, which throws an extra load on the other motor.

By having two long belts, running one over the other, there is almost no slippage, the motors working perfectly. The belt speed, however, must be figured carefully, giving the outside motor a few feet more speed per second than the inside motor.

I tested my motors frequently with a wattmeter and found each carrying its share of the load.—E. A. Betts, Edmonton, Ont.

The Peril of the Adding Machine

One of the greater dangers that confront the manufacturer of clay products, in the adoption of a new cost system, is that he will find out so much about what his material really costs him to make that, when he adds a "reasonable profit," the resultant selling price will be higher than he has obtained in the past, and higher than he thinks he can obtain in the future.

He will then be like the contractor who was induced to purchase an adding machine. Being questioned as to how he liked it, after two or three months' use, he said "I don't think it's doing me much good—it adds up well, and never misses anything, but I haven't landed a contract since I bought the 'derned' thing."

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

Commission Denies Reparation to Pottery Concern

While the California Railroad Commission has ordered the Western Pacific Railway Company to publish and file a rate of sixty-five cents per net ton for clay on minimum carloads of sixty thousand pounds from Tesla, Walden and Carnegie to Stockton, Cal., it has refused to allow a claim for damages to the amount of $523.57 made by the complainant on account of the higher rate previously in effect.

The case in question is that of the Carnegie Brick and Pottery Company, which formerly operated plants on the Tesla branch of the Western Pacific Company. The pottery company filed a protest with the commission against the old rate and also asked that reparation be made to the amount of $523.57. The commission sustained the pottery company in its protest against the existing rate and ordered the railroad company to reduce it, but denied the pottery company's claim for damages with the following statement:

"In addition to proving that the rate at the time it was charged was excessive, it should be shown by the claimant for reparation that some damage or injury was sustained by it by reason of the imposition of such excessive rate. In other words, a claimant for reparation must not merely show

(*Continued on page* 599.)

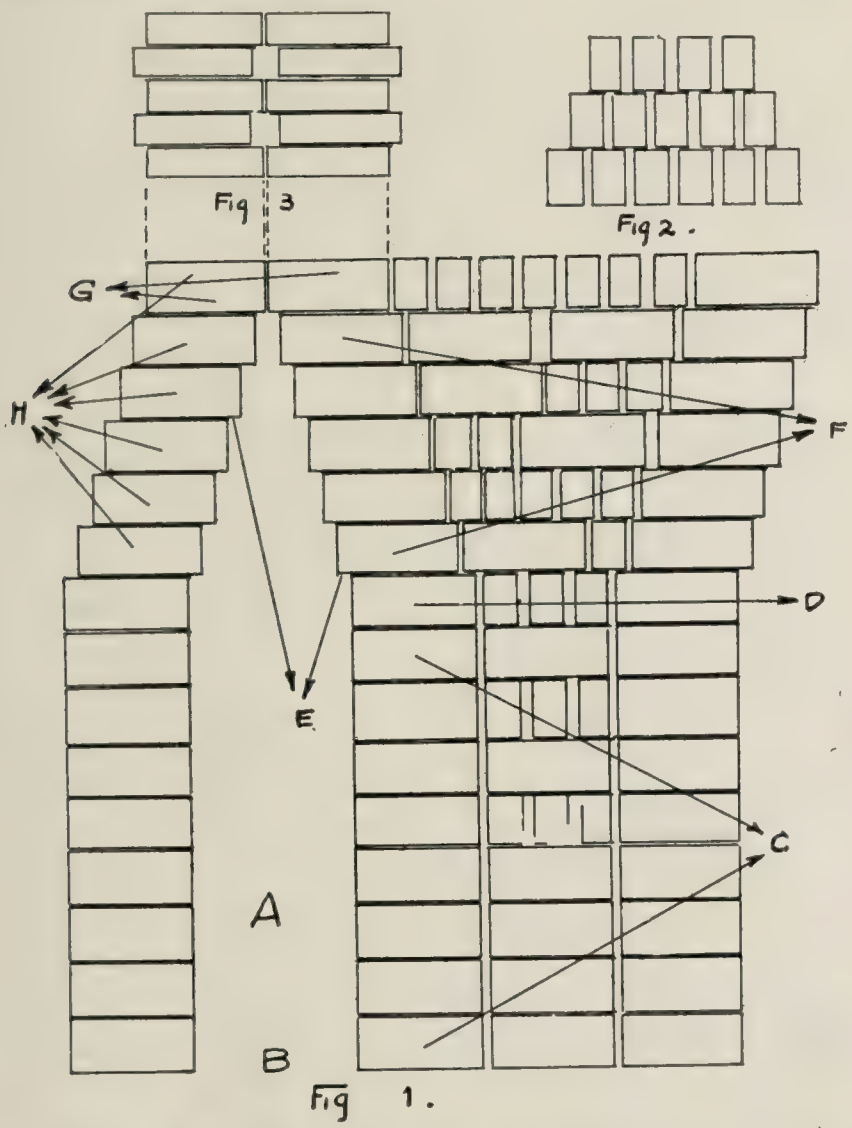
Questions and Answers

Here Are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants Advice on Setting Up-Draft Kilns

612. *Pennsylvania—I am writing you to get your best advice on a condition which gives us a great deal of loss and annoyance. We make a line of common, red building brick, known to the trade as "stretchers, straight hard, hard and salmon" and have a very good market for our product. We burn the brick in open top Dutch kilns, ten arches and twelve inch grates through the kilns, which are 26 ft. 6 ins. wide and 34 ft. 6 ins. long. We set the bottom work sixteen courses high and set twenty courses on top of this. The sides of the arches are set ten courses high straight, with six hangers, that have a one-inch projection to form the arch. We get a very good grade of brick in the twenty top courses, and in the straight part below the arches, as well as in the middle, between the arches, but all of the brick in the facings of the arches, from the tenth to the sixteenth course, are "dead" and have no ring; still they are seemingly sound and uncracked. We often get a number of cracked brick but these are, as a rule, above the arches. Our clay is easy to burn, apparently, as the tops are always good, and we cannot tell whether our trouble is in the setting, the watersmoking, the burning or the cooling. We are sending you a sketch showing the setting, and will appreciate any information you can give us in this matter. Our kilns are cooled in about five days and four nights, and burned in four days and four nights. The brick are dried in a pipe-rack steam dryer and are soft-mud brick. We often find that the brick that are broken have a glossy, bright face on the fracture, but, when broken again, have a rough texture. I would like to know if you think that four hangers, with a one-and-one-half-inch projection would be better than six hangers with a one-inch projection, and would also appreciate any information you can give me as to the best method of setting in this type of kiln. I would also like to know your idea of the best method of burning, and your opinion on a dead middle, instead of a grate straight through. Give me, if you can, the size of the dead middle that a kiln of the width given should have, and whether there should be any fire on the dead middle after the watersmoking period.*



A—Firing Arch; B—Kiln Floor; C—Nine Courses Hacked as Shown in Fig. 2, One-half Inch Apart; D—the Tenth Course, Hacked Tight; E—One Inch Projection; F—Five Courses, Hacked as in Fig. 2, One-half Inch Apart; G—Top Hanger Brick Hacked as in Fig. 3, Every Other One Drawn Back Two Inches; H—Six Courses on Both Sides of Arch That Produce "Dead" Brick; On Top of G Course, the Brick Are Set Five-on-two; Then Six More Courses, Set Six-on-two.

The setting appears to be all right, and is, in fact, the method generally employed in soft-mud plants. If the brick come out "shaky" in the arch, as noted in the question, then our opinion is that the one-inch projection is better than four hangers with one-and-one-half inch projections. With the present method of setting the arches, a higher percentage of the brick is protected. The setting of four brick, with the inch-and-a-half projection is, however, worth trying, since the four hangers will present a smaller number of brick in the arches, and, perhaps, less loss.

While it is merely theorizing, we cannot see why the watersmoking or the burning, or the cooling should cause the trouble. Why it singles out the arch brick, disregarding the risers in the arch, and limiting its action to this one point, is, to say the least, curious. The courses immediately above the arch—fourteen high—are set five-on-two; certainly this can cause no back pressure, or, in other words, it provides sufficient space to carry off any surplus steam, and, later on, high heat. The arch brick themselves—set six high—are spaced exactly like those immediately under the arch, giving a certain draft clearance—the same as those in the supporting wall. Yet these latter brick absorb and give out heat, or, in other words, partake of all fluctuations in temperature that affect the arch brick.

It is possible that the brick which immediately adjoin the arch brick and back them up, are set too tightly—and so do not allow the free circulation of steam, heat and, finally, cold air through the inter-spaces.

Regarding the best methods for burning—this would depend so much upon the character of the clay, that a discussion

of that point would have to be held upon the yard, rather than several hundred miles away. The location and size of the grates also depends upon actual conditions of fuel, material and product, and would also have to be determined by experiment made under practical working conditions.

Wants to Make Colored Brick

616. *Quebec—Could you suggest to us any book giving recipes for making different colored brick or the name of some expert who could give us advice on this subject?*

Volume XVI of the Transactions of the American Ceramic Society contains an article "On the Burning of Rough Texture Shale Brick," by Walter A. Hull. This article deals with the production of various colors by setting and burning in different ways. In point of fact, the production of varying shades in shale brick is almost invariably a matter of setting and burning. Outside of the "Transactions" we do not know of any book which gives reliable information on the subject. This book costs $5.50.

If you will advise us as to the kind of clay that you are using, the process employed and the results you desire to obtain, we may be able to give you some definite information which will be of value to you.

This Dryer Does Not Dry

619. *Pennsylvania—We would like to have some advice about our dryer. We are making a soft-mud brick, six in a mold, placed on a wooden pallet, 414 brick to a car, the pallets being spaced three inches apart on the cars. The dryer holds 33,000 brick; we set 11,000 in the morning and make 11,000 in the afternoon, drawing the cars as the new ones are put in—this is, at the end of three days. Our trouble is that the brick are not always dry at the end of three days, but we have to draw them, or stop making brick. The dryer is a home-made affair, 75 by 40 feet outside measurement. The outside walls are of brick, as well as a nine-inch wall that divides the dryer into two chambers. The roof is about 5½ feet above the tracks and is double boarded. On it we have about ten inches of clay, with a double pitch roof above this. We have eight tracks, holding ten cars each, the ground being even with the ties, and our steam pipe is all between the tracks—on the ties. There is 10,000 ft. of steam pipe in all —sixteen lengths by full length of the dryer. The diameter of the pipe is one inch.*

We have twelve ventilators up through the roof, that are ten inches square, and two stacks 16 by 38 in. and 24 ft. high. There are two sets of doors at the stack end of the dryer, the bottom of the inside doors being ten inches above the tracks. Our idea is to draw the vapor down, under this door, and up through the stack. At the other end of the dryer, we have a cold air flue eighteen inches square, the full width of the dryer—which is 40 ft.—with a ten-inch opening under each track, extending ten feet inside of the dryer, to help drive off the vapor. For steam, we have two 50-h. p. boilers, carrying 80 lbs. pressure, day and night.

Theoretically, there is no reason why this dryer should not dry 33,000 brick in three days. Practically, according to our questioner, it fails. Since the theory is correct and the practice wrong, there is no way of solving the trouble at a distance. We would strongly urge the questioner to send for a brickworks' engineer—one who makes a specialty of dryers —paying a fee for his advice, but insisting that the advice be given after a personal inspection of the dryer.

Wants to Know About Salt-Glazing

621. *Kentucky—We have just had our clay tested for salt-glazing and find that it will take the glaze by only a very narrow margin, and we would like to have about all of the information you can give us as to the mode of procedure in salt-glazing, as we are going to make silo-block and want to glaze them. We want to know more than we know now, about handling the dampers and applying the salt. We have a twenty-six-foot round, down-draft kiln, with slanting grate-bars, ten fire-holes or furnaces, bag-walls about seven feet high—nine wall stacks and kiln floor perforated with a twelve-foot circle in center, and one large circle flue outside of this. We get very good burns on our drain tile, down to the very floor.*

The fact that you have a kiln which burns good drain tile to the very bottom settles the question of your having the right equipment. As to the clay—that is another matter. In the first place, we would suggest your reading the paper that was read by L. E. Barringer, E. M., before the American Ceramic Society, in 1902. This was published in Vol. IV of the Transactions of the American Ceramic Society, and may be obtained from the secretary, Edward Orton, Jr., Columbus, Ohio, for $4.75, bound in cloth, or $4.00, bound in paper. The title of Mr. Barringer's address was "The Relation between the Constitution of a Clay, and Its Ability to Take a Good Salt Glaze." In "Brick and Clay Record," issue of Sept. 15, 1914, on page 616, a short article appears, which may be of some assistance. In order to save your going through your old files, we will publish it again:

Bring the kiln up to a pre-finish heat. Quickly get the furnaces white hot with a very thin, clean fire. Sprinkle one shovelful of salt evenly over this prepared bed of coal. Drop damper as low as possible, allowing a very stagnant draft.

When the salt fumes become thin, open the damper and regain lost heat in the fire boxes. Repeat the operation.

A finish is indicated by drawing trials.

It is best to start the glazing operation before the total settle is obtained, as the operations noted above will keep the kiln settling, although the body heat of the kiln is reduced.

Wants Classification for Mixed Sand and Clay

628. *California—Do you know of any court decision setting forth what is sand and what is clay and when each carried a part of the other? Or have you any common sense definition as to what is clay and what is sand, the sand carrying a small percentage of clay and the clay carrying a small percentage of sand?*

We have been compelled to write the above correspondent stating that we did not know of any decision covering the above proposition. The question is now published with the hope that some one of our readers may have heard of a case where this matter was adjudged and if so, "Brick and Clay Record" would appreciate the information.

Wants Razor Hones of Clay

629. *Indiana—I would like to know the names of manufacturers of cheap razor hones. I understand that they are made of Arkansas clay. If you cannot give me the desired information, please let me know where I can write and get it.*

Will any of our readers who know anything regarding the production of razor hones made of clay write to this office, giving us the information asked for by the above correspondent?

Wants Book on Making Rough Texture Brick

634. *Virginia—If you can furnish me with a book on the manufacture of rough texture brick, please let me know the price.*

Attention is called to the reply given No. 616, on this page. The book mentioned may be obtained from Edward Orton, Jr., secretary of the American Ceramic Society, at Columbus, Ohio.

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

IT TAKES NERVE for a firm engaged in the very serious business of making clayworking machinery, to come before its customers with a book of poetry. It could be understood, if this were a concern making frivolous things, such as women's hats or men's walking sticks.

Nevertheless, it has been done, and E. M. Freese and Company, of Galion, Ohio is the concern that "went and gone and done it."

And to show the kind of poetry that the Freese people offer to their old friends and prospective clients alike, some of the verses and some of the illustrations that accompanied them are given here. The first verse is printed upon the cover, following the well known prescription symbol—a capital R with a crossed tail—signifying "take." This verse reads:

For tired nerves and weary brain
Take, every little while,
A fair size dose of Foolishness
And in between—a Smile.

That being over—and the leaf turned, we find

We may as well confess to you
Before you read this rhyme,
It took a little cerebrum,
But mostly nerve and time.

We trust that each one mentioned
Will in no way take offense—
If someone should, and won't be good,
B'lieve us, we're going Hence!

From this point, the book is taken up and the "plot" begins to thicken—mostly with familiar names. Being as it were, among friends, we may as well go on:



Go Hide in Parks

We'd Like to Know!

They say this war may bring us in—
We hope it isn't so.
But if it does there's several things
We'd really like to know.

Would HUCKINSist on fighting,
ORR do you think he WOOD
Go HYDE in PARKS of Nelsonville
Or any PLACE he could?

If finDINGHOUSE nor home he roamed
For MILES some RAINEY KNIGHT,
Would the TOWNSEND help or TURNER back
When they SEE his HARRIS WHITE?

WILCOX join the ALLIANCE
When loud the bugles BLAIR?
Will the DECKMAN do his DUTY
When the KANENGEISER there?



Would the Town Send Help?



The Widow and Her Son

When up the HILL, across the MOATZ,
Through WINDSOR HALE we tread,
Against the BARBOUR 'lectric wires
That BARR the road ahead.

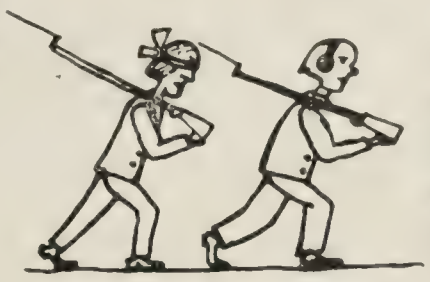
Should we stop to save the widow
ANDERSON and other kin,
Would WILLIAM E. DEElighted be
Because we saved 'ERSKIN?

Over MARSHALL wet and FLOODed
Through the BUSH and BRUSH we CHASE,
If PURSELL should take a GRANDstand
KENNEDYfend the bloomin' place?

If T. A. RANDALLirious
And fired BRICK about,
When FRANCIS fell into the well
Would G. P. FISCHER out?



Can He Defend the Bloomin' Place?



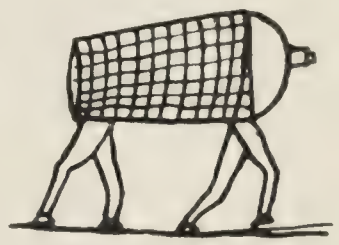
May not See nor Hear

If someone charged up HARPERHILL,
STRAIGHT in their DENNY flew,
The colonel would reward, but
HOULIHANd the medal to?

We MAYER may not SEANOR hear
The SCHOTTE that fills the AYER,
But if we saved the FLAGG from harm
Won't we have DUNN our SHARER?

Would it make the RODGERS DRYER
If the FRENCH should BARR the BEER?
And if Rodgers did get thirsty
Isn't TRAUTWEIN always near?

And if the Yellow Dragon
DELTA blow that turned us pale,
What kind of doctor could we get
Should C. F. CLIPPERTail?



Trot-wine



Though Haggard He May Be

And when his wounds are DRESDEN well
Though HAGGERTY may be,
Would LARKINSist on staying
When our HOLMES we LONG to see?

Suppose we gathered KLOSE in CAMP
And to a game sat in,
If DAVIS dealt a PERROTT treys
Could he play WHISTON WYNN?

I'd rather FARR my guiding STARR
Would let me die in peace,
And if I kept my CHAMBERS
Could it be my FATE to FREESE?

Don't like WARREN ITTNER scrappin',
Does no GOODE that I can see—
"TOM BROWN'S body lies a MOULDING"
Won't go when they BERRY me.



Waring It



What's Butter Worth?

I sure LOVEJOY so WATTS the use
Of HALLing out my blade—
You think I' go unless I know
My return FERRIS paid?

To me this war is serious,
I see no cause for mirth—
For AYLESWORTH fifteen cents a glass,
And Gee! what's BUTTERWORTH?

Several pages follow, also devoted to "poetry" and to artistic efforts, of which those shown are fair examples—

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.

Sturtevant
BRICK DRYING SYSTEMS
increase output and decrease expenses. Write for bulletin 202-S.
B. F. STURTEVANT COMPANY
Hyde Park, Boston, Massachusetts, and all principal cities of the world

Our business is diagnosing and remedying
T R O U B L E S
of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult
H. & B. COPPING, Kankakee, Illinois
We personally do the work.

SAVING
with Frink Pyrometers starts within one week of the receipt of your order. No interruption to the progress of your work. Ask us HOW.
The Frink Pyrometer Co. Lancaster, Ohio

DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

H. M. DEAVITT, *Ceramic Chemist*
209 South LaSalle Street, Chicago
Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

The DEWEY 5-Ton Locomotive
It never balks on heavy loads or grades
Why not let the Dewey do *your* work?
DEWEY BROS., Inc., Goldsboro, N. C.

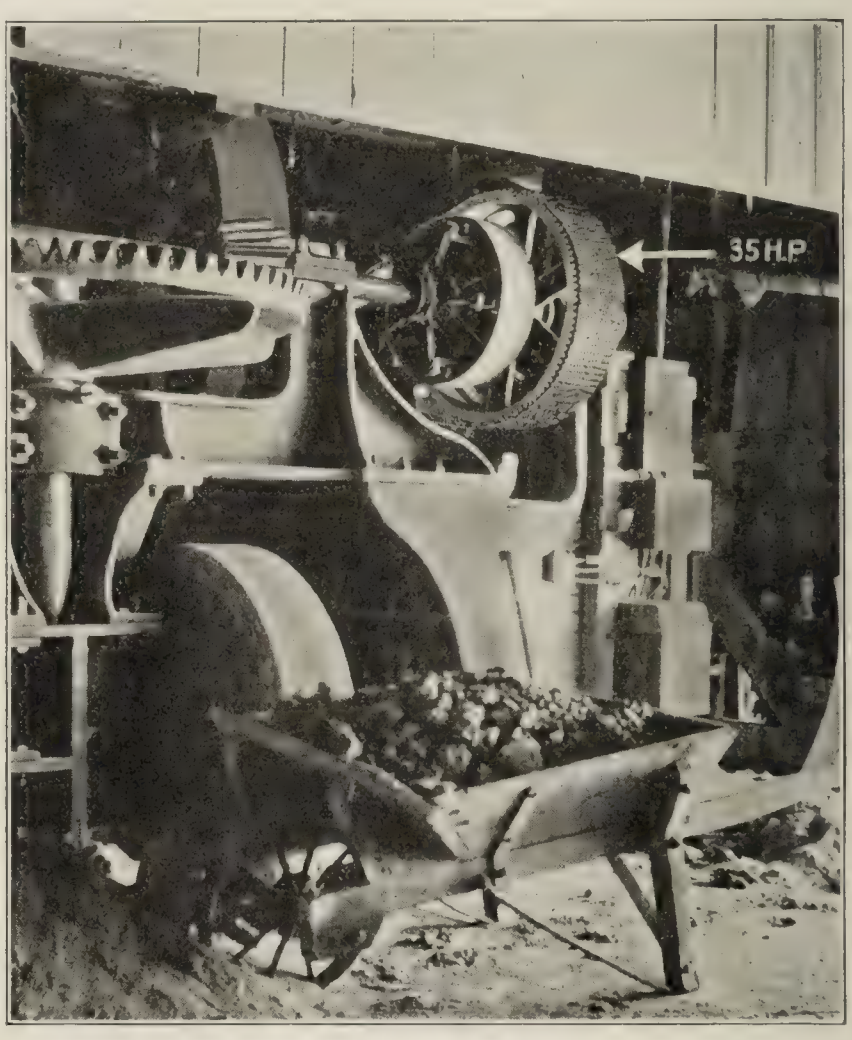
IF YOU HAVE A WANT
Make it known in "Brick and Clay Record's" Classified Columns, and get results.

but, in addition to the comedy, there are several excellent illustrations of Freese machinery, and some very sensible descriptive matter concerning it.

Altogether, the book is one that is worth having, and therefore worth sending for—a hint that it is hoped will not be lost on the clayworking fraternity.

The Link-Belt Silent Chain

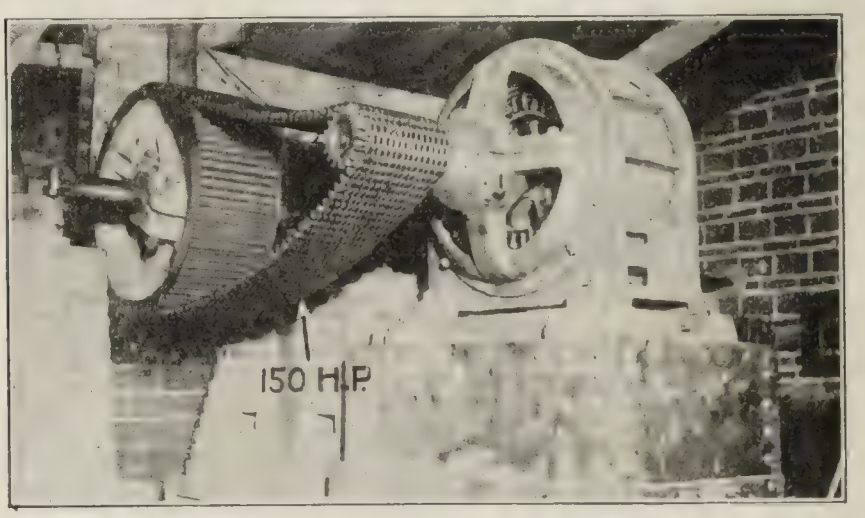
The Link-Belt Company, in data book No. 125, illustrates and describes this successful method of power transmission. The development of the silent chain drive is shown together with the various steps taken and the logical reasons for its development. Since its introduction from England in 1900,



Link-Belt Installation at Dover Fire Brick Company's Plant, Cleveland, Ohio. This is a 35 H.P. Drive at Dry Pan

the Link-Belt Company has labored to give it its present day perfection.

For the clay products industry very constant power must be



..Link-Belt Installation at Ohio Clay Company's Plant, Cleveland, Ohio. This is a 150 H.P. Drive on Main Line Shaft

maintained with a minimum of loss and the maximum of efficiency. The silent chain drive has been found ideal. It is no

longer an experiment, but equipment proved and recognized as good practice and already installed in a large number of clay plants.

The superintendent of one plant where the silent chain drive is used, recently said: "I think very highly of the Link-Belt. For brick plants with individual electric drive it has distinct advantages over other belts and gearing. It has nearly 100 per cent efficiency, there being no slip, and as the motors can be set close to the machine there is a decided saving in floor space. I believe the more clayworkers come to know this drive, the more they will use it."

The Link-Belt Company, 39th and Stewart Ave., Chicago, Ill., will gladly send data book No. 125 to any clayworker who asks for it.

Another Clayworking Problem Solved

The Clayworkers' Exchange, with headquarters at Springfield, Ill., has recently been organized for the purpose of buying, selling and exchanging new and used equipment, making a specialty of clayworking plants. Allen P. Rice, the general manager, has had several years' experience in the manufacture of brick, tile and hollow building block, and is thoroughly familiar with the needs of clayworkers. It is the idea of the exchange that clayworkers are in need of co-operation and assistance in both the buying and selling of machinery.

Oftentimes it happens that equipment is installed that is unsuited to the requirements or conditions of the plant, and a change of equipment is required. Here the Clayworkers' Exchange becomes a necessity. It stands ready to buy the new and sell the old, giving the plant owner the benefit of a service that he is not able to secure in any other manner.

The Clayworkers' Exchange buys, sells and exchanges on an absolutely guaranteed basis of worth. It is not affiliated with any manufacturer of machinery. It does not issue a catalog.

It will, however, send any clayworker a list of the equipment that is for sale; at the same time, it solicits a list of used machinery, that clayworking plants may have, awaiting a buyer. It is useless to add that no machine that is in anything but good condition, is wanted, and a full description of the machine, given in the first letter, will save additional correspondence.

Ambursen Company in Arizona

The Ambursen Company is now erecting for the Sterling Borax Company at Patagonia, Ariz., a Lawson Automatic Tramway 6,250 ft. long, which will handle 100 tons of lead-silver ore per day. The net fall in that distance is 620 ft., the tramway passing over a summit 380 ft. high. The tramway generates its own power, requiring only a gasoline engine to handle it when running without load.

National Fire Protection Association Booklet

The National Fire Prevention Association has issued a pamphlet that should be in the hands of every clayworker whose product is used in building construction. It is entitled "Individual Liablity for Fires due to Carelessness or Neglect," and is along the line of the article published on page 456 of the March 2 issue of "Brick and Clay Record."

Copies may be obtained by addressing Franklin H. Wentworth, secretary, 87 Milk Street, Boston, Mass. Incidentally, it will be enlightening to read the list of active members of that association—and the absence of brickmakers and of brickmakers' organizations.

Increased Efficiency *Greater Economy*

Results obtained from use of

"Fuller Quality"

Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways
Yellow Strand Wire Rope
Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.



Pyrometer Permanence

You have frequently heard of other pyrometers being displaced by the STUPAKOFF LE CHATELIER, but you have never heard of the Stupakoff Le Chatelier being replaced by any other make.

Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa.

6

"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel Rails and Accessories

BUCKEYE MEANS BEST — BEST MEANS BUCKEYE

Offices: Steubenville, Ohio

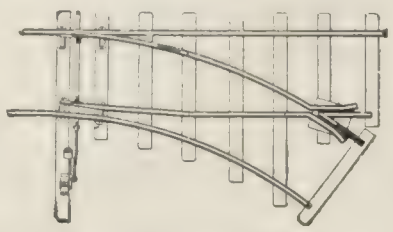
Mills: Newark, Ohio

All Sections from 12 lb. to 40 lb. per yard

Write or wire us, when in need.

No order too large to handle promptly or too small to secure immediate attention.

SWITCHES
CROSSINGS
FROGS
SWITCH STANDS
RAIL BRACES
TIE PLATES



Any kind of *TRACK EQUIPMENT*, standard or special, shipped the day you want it

The Cincinnati Frog & Switch Co.
Cincinnati, Ohio

CARS

Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS CARS CARS

Let Us Plan a Trip for You to the
California Expositions

Printed matter free for the asking. For information regarding rates, train service and description of various scenic routes address C. A. Cairns, G. P. & T. A., C. & N. W. Ry., 226 W. Jackson St., Chicago

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.



The Semi-Monthly Trade Review

PARTIAL returns of building construction from leading cities in the United States indicate that the one hundred and nineteen cities usually reporting will show for February a total of about $51,000,000 as against $55,000,000 in January. The number of permits granted or plans approved reported from eighty-one cities to Bradstreet's up to March 5 showed a total of 9,914 with an estimated value of $29,792,000 as against 11,914 valued at $31,371,000 in the same month last year. This shows a decrease of 16.7 per cent in the number of permits, but a drop of only five per cent over the total valuation for February of last year. There are still thirty-eight cities to be heard from officially.

There are also other signs of an improvement in the general state of the country's financial market. More pig iron is being produced. February, as predicted, developed a gain of 100,000 tons of unfilled steel orders over those taken in January although there were only twenty-two business days in that month. Manhattan Borough of New York, which has been the sluggard for half a year in comparison with other sections of the city, developed a gain in general building of seventy-five per cent during the past month, over the corresponding period last year.

Common brick closed on March first with only nine barge loads in the New York wholesale market, or 3,150,000 Hudson River brick. Portland cement was being cut in a fearful price war so that every order taken by the Lehigh Valley mills was booked at from fifteen to twenty cents per barrel below cost of manufacture. The Edison Portland Cement Company announced that it would stop manufacturing cement until the market improved, turning its unfinished business, which amounted to about 160,000 barrels over to the Lehigh Portland Cement Company.

Further developments in the Portland cement situation in the East indicated a strong probability that a corresponding rebound is about to follow the big cut in price. While prices at mill are now quoted on spot delivery at fifty-five and sixty cents, predictions are freely made by prominent men in the trade that before August first, the price will be nearer a dollar a barrel, mill, which will be ten cents above mill price of January 1 and that there may be an actual shortage in supply. There is talk of the formation of a great chain of Portland cement mills from the Atlantic to the Pacific with Edward A. Hager, former president of the Universal Portland Cement Company, as president. The Lehigh and Atlas are reported to be the two important eastern concerns in the deal,

although there is a rumor that one of the recalcitrant small companies like the Knickerbocker, Allentown or Dexter companies, will also be taken into the combine because of their advantageous position with respect to railroad connections for the Pittsburgh district. Sixteen companies are reported to be in the deal and incorporation papers are being drawn under the laws of Delaware. The Lehigh company reports that it is now operating more than two-thirds of its capacity.

All this goes to explain what has struck the eastern brick buying movement. Cement has been made so low in price in New York and vicinity, that dealers have been removing brick from their sheds to make room for cement, which they plan to hold for a rise. Normally, the absence of a single barge load of uncovered brick and of nine covered barge loads, in the first week of March with the building season only a fortnight off, would send wholesale prices sky high. But owing to the fact that the dealers have been delivering brick from stack to job, instead of coming into the market for supplies, the price has sunk until it has reached the low level of $5.50 and $6.00 dock, with the majority of sales running at $5.75. Normal March prices are about $7.00.

In the meantime, building construction is developing apace, not only in New York, but elsewhere. There is nothing startling about the February reports. They indicate only a steady, healthy strength, which is hoped for everywhere. They are in conformity with the encouraging reports received from other branches of industry depending upon American markets. The financial situation, while suffering a temporary setback from the establishment of blockade zones abroad, through the advancing of war insurance risks and high freight charges, is still strengthening and there is apparently nothing on the horizon that can threaten or seriously disturb the generally improving conditions everywhere.

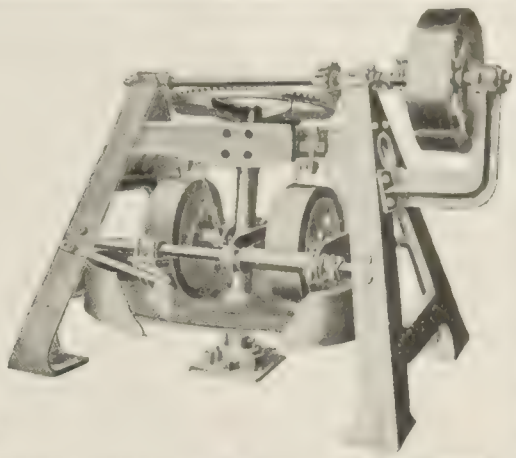
In art and decorative tile, American manufacturers are beginning to take advantage of the big opportunities being offered through the prolongation of the European war. Foreign tile promises to be supplanted by that of American manufacture to a large extent. There is a propaganda being spread about the country today calling upon American home builders to insist upon the specification of "Made in America" vitrified tile in their homes. Dealers are also being urged to adopt this slogan and to encourage American manufacturers to turn out decorative tile and polychrome quarry placques equal to those formerly supplied by foreign manufacturers.

At the Baltimore convention of the tile and mantel industry held in February, the delegates in executive session made a most strenuous appeal to manufacturers to stop manufacturing four grades of vitrified and porcelain tile and concentrate on two, and then make every effort to induce the government authorities to specify the use of this decorative material in government buildings. It was also urged upon the manufacturers that they co-operate with the dealers in trying to have enacted laws that will compel the use of tile or enameled brick in all butcher shops, packing houses and similar places where sanitation and absolute absence of rodents and vermin is essential.

This is in line with the "Build with Brick" propaganda that is being carried on throughout the country with such splendid results.

Estimates of the total production of common brick throughout the United States during 1914 have been made. The average price per thousand probably will show a

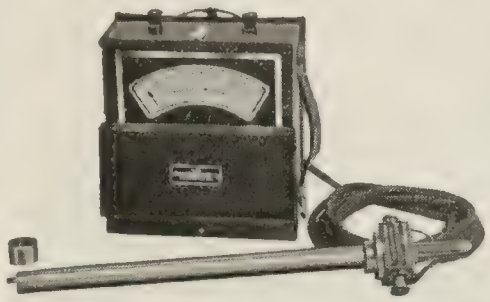
THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES, IOWA

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

Jackson & Church Company
Saginaw, Michigan

PERFORATED METAL SCREENS
As required for BRICK MAKERS USES.



New York Office
Room 1028 Cortlandt Building
Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.

"Clinton" Brick and Mortar Colors

Unusually strong in pigment. Positively warranted not to wash out, "streak," or fade. Recognized everywhere as the standard of Brick and Mortar Colors.

Insist on seeing this label

Full particulars and prices gladly furnished.

Insist on the genuine "Clinton" colors made only by

Clinton Metallic Paint Co. Clinton, N. Y.
P. O. BOX 38



Davenport Locomotive Works,
Davenport, Iowa

J. M. CUTSHALL C. F. CUTSHALL

General Contractors

We install waste heat dryers, build clay plants complete; also construct any type of kiln.

Brazil, Indiana



drop of fifteen cents, making the figure for 1914, $6.05 as against $6.20 in 1913. The total quantity of common brick made last year has been tentatively fixed at 7,690,000,000, of which the Hudson river district in New York manufactured about 769,000,000. Ohio will probably be shown to have produced about 390,000,000 brick as against 407,685,000 in 1913; Illinois, about 877,000,000 as against 1,155,480,000 in 1913; New Jersey about 390,000,000 in 1914 while 401,702,000 brick were made in the year previous, and Pennsylvania, 500,000,000 as against 704,000,000 the year before. These estimates are based upon incomplete returns, having been taken from test reports from some of the leading brick plants of the country. They indicate to what a comparatively small extent the clay-working industry has suffered cnosidering the stagnation in other lines, such as cotton, steel and similar standard commodities during the past year.

Convention Echoes

George Addison Bole was the only man who saw the inside of the Ajax plant—and he had to.

George Potts says he is going to give up cigars—when they quit making them. George is a mighty good fellow at that.

Harry S. Hamilton of McArthur, Ohio, was lonesome, not having "the boss" along, to go shopping with him.

D—— D—— Deeds of the Thew Automatic Shovel Company refuses to tell what the earlied D's stand for.

Where was the "King of Ireland?" This is the second convention in fifteen years that was darkened by the absence of his radiant countenance.

Has anyone seen Roy Bennet of Wellington, as yet? When last seen or heard of, he was at the Hotel Tuller. Gibson has been accounted for.

R. D. Lindsay came all the way from Denver to tell brother brickmakers why Denver is such a beautiful city—it's a brick city, of course.

Preston Penfield seemed to enjoy Detroit. In answer to inquiries, we hazard a guess that the dancing was not the least of the attractions.

W. H. Gifford of the Cleveland Builders' Supply Company looked prosperous, despite the fact that he has recently built a new home—a brick man's brick house—even to the roof.

Page A. Robinson, of the "American Architect," was "hot on the scent" of the big publicity fund that was contemplated by the "Committee of Ten."

Ochs Jr. of Springfield, Minnesota, was one of the live wires of the convention. His fur cap was right in tune with the weather, too.

Ed. Mellen of "Nugget" Babbitt fame was right in the midst of all the hilarity—colored glasses and Chappie hat. We heard five different stories about those eyes. What about it, Ed.?

Raymond Miller Howe of the American Ceramic Society, enjoyed himself at the N. B. M. A. Smokerette. He says that he prefers to dance with prominent people.

Robert J. Montgomery, of the Pittsburgh Plate Glass Co., says that the pressure was so strong in his shower

at the Tuller, that he neary slipped down the drain. Rob isn't fat you know.

Roy Bennett wasn't away from Wellington long enough to get over that go-to-bed-early habit—but Mrs. B. was "schooled" in Cleveland. Roy had better not come to any future conventions without his popular running mate.

W. H. Bunce, of Kane, Pa., brought a few brick with him and they were such fine specimens of Ox-blood red that "Brick and Clay Record" grabbed them for its display. It also kept Bunce coming back often and we liked that too.

"Lost:—One perfectly good made-to-measure night-gown, sometime between sunset and sunrise. Liberal reward—no questions asked. Phone Ha—Fa—. Fifth floor."—Statler Hotel Bulletin.

E. P. Teague, of the Union Cement and Lime Company (wait—he sells face-brick), was looking for new accounts. Note by Advertising Manager: "Why not sell him a card in the pink section?"

John D. Martin of New Straitsville, Ohio, added to the good opinion the brickmakers had of him, by bringing his wife, who is a certificate of good conduct and good taste without which John cannot afford to travel around very much or very far.

Next door to "B. & C. R.'s headquarters" was the Alliance Brick Company's display of the now famed Alliance "Rug" brick. Some one said the Statler was thinking of adopting the idea for flooring in his next hotel. Anyway there were a good many "oh's" and "ah's". Ask Hoiles—*he knows.*

Prof. C. F. Binns liked the one in Alice blue the best at the Tuller Hotel cabaret, yet according to Alfred Yates he is old enough to have known better—I mean he should have said blue sub 5.5, one-fourth neutralized toward green.

C. A. Gardner, of the American Enameled Brick and Tile Company, New York, and John H. Donahue, of the Belt Line Brick Company, St. Paul, were visitors in Chicago after the convention, coming together from Detroit. After a brief stay, they left for St. Paul, the place that Mr. Donahue calls home.

Waldo A. Titsworth, Sc. M., was a member of the delegation from Alfred, N. Y., attending the conventions. At the Parke Davis' factory he asked a girl with what she was filling those little gelatine capsules. The girl with difficulty refusing to smile, said, "Castor oil, sir." Waldo is a professor of Physics too.

"Bob" Queisser of the Queisser-Bliss Company, Cleveland, Ohio, has been making some rapid moves since the convention. He left Detroit Thursday evening, February 18, returning to Cleveland, from whence he came on to Chicago to attend the annual convention of the Rotary Clubs, which was held in the Congress Hotel, Monday, February 22.

Kennedy Stinson, Managing Director of the Stinson-Reeb Builders Supply Company of Montreal, Que., was busy as a honey bee in a clover patch, trying to secure face-brick agencies that were not already tied up, so far as Montreal was concerned. Loud clamor from the advertising manager—"Why don't these fellows advertise in the Pink Section?"

Rev. J. R. Kline of Detroit, Mich., was an interested visitor. He says that he, too, is a worker-in-clay, being a gospel minister. He also figures that there is considerable similarity between men, and brick—they are molded when plastic, "sanded" in early youth, put through the fire sometime in their careers, and emerge from the

BRICK BY PARCEL POST

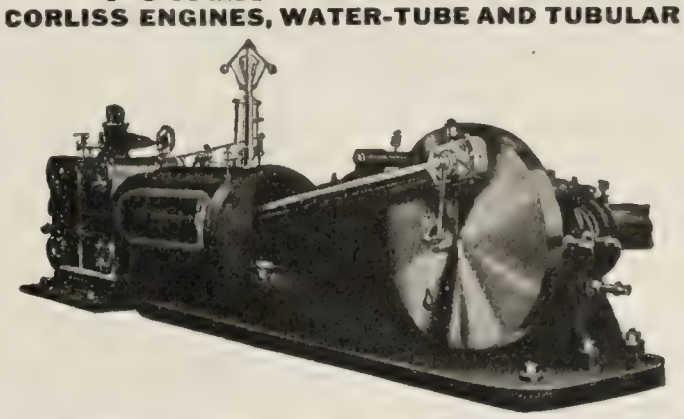


An item of expense that is by no means a small one, is found in the cost of selecting, marking, packing and shipping sample brick. When, as in many instances, they reach their destination in bad order, the whole expense item is a dead loss.

Use the Hinde-Dauch corrugated container and insure the safe receipt of your sample brick. Proven the best in actual test. We also manufacture cartons in various sizes for all purposes.

THE HINDE & DAUCH PAPER CO., Sandusky, O.

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

Do You Know—

1. That the investment of a comparatively few dollars in brickwork (that is—more brick) will save itself, in insurance premiums, in eight or ten years?

2. That the added security from fire—that is, fire started in your own plant, or that of your neighbor—is "thrown in," free of charge?

Read

"Saving Dollars by Using Brick"

(Sample Copy will be sent for a two-cent stamp)

Then consider whether these facts are a part of the information you would like to have placed in the hands of every architect, every construction engineer, every prospective builder of a residence, warehouse or factory in the community your plant serves.

If so, consider the cost of copies:

100 for $ 4.00	500 for $15.00
1000 for 20.00	2500 for 40.00

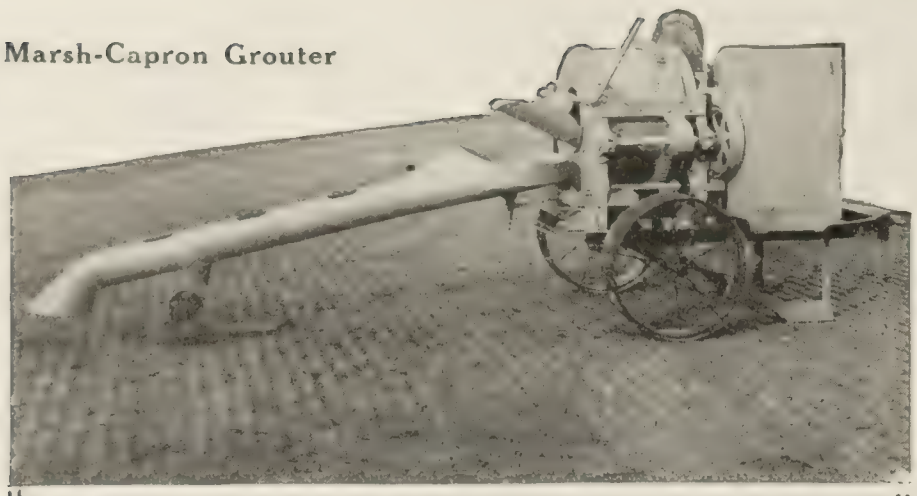
It is an eight-page folder—the price is very low for literature that should increase your sales.

Drop a card—today—to

Brick and Clay Record

445 Plymouth Court Chicago, U. S. A.

Marsh-Capron Grouter



Successful Brick Paving

depends, in great measure, on correct concrete grouting. Most economical, easiest and most permanent grouting is done with the

MARSH-CAPRON GROUTER

This machine bears the unqualified endorsement of leading paving contractors and paving brick manufacturers the country over. It simplifies the work of grouting and adds profit to every contractor who operates it.

Further particulars may be had by addressing us on a postal card.

MARSH-CAPRON MFG. COMPANY
461 Old Colony Bldg. CHICAGO



Our Specialties

Feeders for Dry Pans and Pug Mills.
Piano Wire Screens.
Elevators and Conveyors.
Counters for Machines.
Trucks, Barrows and Cars.
Draft Gages.
Thermometers and Pyrometers.
Dryers and Kilns.

Ceramic Supply & Construction Co.
Columbus, Ohio

test men (or brick) that ring true, or cracked, broken, swelled or otherwise visibly unfit.

The Everhard Company, of Massillon, Ohio, is going to decorate the fences around the town that Coxey made famous, with "Build with Brick" signs. The order is—as they say in the "short order" houses—"on the fire."

Through the kindness of Mr. H. J. Caulkins of the Caulkins Kiln Co., the Alfred, N. Y., "bunch" at the convention was furnished with a closed machine for their personal use on the day the A. C. S. took their inspection trip. "Monty" was so pleased with this arrangement that he would not ride with the pall-bearers, and as he had the map, the hearse got lost. The funeral was over before noon, however, and the rest of the trip went well.

Following the homegoing of the delegates, many discussions have been held, regarding the proper way of designating the silent partner in the brick plant—which is the brickmaker's wife. We cannot call her a "brickmaker-ess"—nor, as has been suggested, a "brickmaker-ette." Of course, "brickess" would do, and "briquette," while a nice word to see, is not so pleasing, when it is found to apply to minature brick. Maybe the best way to do is to dismiss the subject by giving her the highest title that can be conferred in a brick plant—"the boss."

The few delegates who came back from Detroit by daylight probably noticed the freight house on the Michigan Central, about ten miles west of Battle Creek, that had been damaged by fire. That is to say—it was all burned up (or down) except the brick walls, which were intact. This looks like a good place to tack a "Build with Brick" sign, and to take a picture, that may be run in the local papers. "Brick and Clay Record" would run a picture of that kind, if anyone had the sense to make a snap shot.

Now that the smoke of battle has cleared away, Dayton, Ohio, looms big upon the horizon, as a contender for the 1916 N. B. M. A. convention. In S. H. Ankeney, their publicity manager, the Greater Dayton Association has a hustler. He says "Tell your readers that, if they have an idea that Dayton still has her feet in the mud, they are very much mistaken. We have the livest city of 130,000 between the oceans." Phew! Will someone please turn off that electric fan? There seems to be an awful draft.

The Bucyrus Company, advertising steam shovels in the "Excavating Engineer" show one of their shovels "ripping up 600 foot concrete blocks at the rate of one a day." The ad. is not very clear, as it does not say whether these "blocks" are sections of streets, or what. At any rate, H. R. Straight, of Adel, Iowa, writes in to say that he isn't sure whether the picture is intended to show a good steam shovel, or a poor paving material. The answer may rest in the outcome of this "ripping"—will the pavement in front of the Hotel Marion, in Ogden, Utah, be relaid with concrete, or some other materials. Brick contractors of Ogden please write!

The lumber manufacturers were right on the heels of the brickmakers, in starting a real "educational" campaign. The only difference is that the lumber men have an association, already formed, in which membership is a matter of application, examination and election—resignation a matter of writing a letter, which is acted upon by a board of directors. This, and the fact that the lumber men have acted in harmony in the past, makes the propo-

sition of "assessing" the membership of their association on the basis of the known output of each individual, practical, plausible and possible. The brickmakers will have to "get a move on" and start their campaign right away, or the lumber men will have the lead on them.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

Lewis Minor, one of the organizers of the Bessemer Fire Brick Company, died at his home in Birmingham, Ala., February 16. He was fifty-six years old. Mr. Minor was well known in the brick and clay world, especially in Birmingham, where he had attained considerable prominence in industrial and building circles.

CALIFORNIA

The California Brick Company, of San Francisco, has partially closed down its plant at Decoto, Cal., on account of the wet weather, which has stopped the work in the clay pits.

Gladding, McBean and Company, Lincoln, Cal., is now making deliveries to Grass Valley, Cal., of the hollow tile to be used in the walls of the United States post office building at that place.

The Furlow Pressed Brick Company, Hermosa, Cal., is meeting with consideraable success in the marketing of its sand-lime brick to local builders. It has also furnished the brick for the Glendale High School and the Crown Apartment building in Pasadena, as well as for the new Regent apartment building in Los Angeles and other buildings in that part of the state.

Gladding, McBean and Company, brick and terra-cotta manufacturers of San Francisco and Lincoln, Cal., have been awarded a $9,200 contract for the terra-cotta to be placed on the San Francisco Mission Branch Public Library.

The Pratt Building Materials Company, of San Francisco, brick dealers, has bought the entire stock of the Vallejo Brick and Tile Company, the latter's plant having been closed down for some time. The stock taken over includes about 500,000 pressed, sewer and paving brick. The Pratt Company also bought the San Francisco yard of the Vallejo Brick and Tile Company at Sixth and Berry streets, thus securing a good location on tidewater.

N. Clark and Sons, brick and tile manufacturers of San Francisco, report a growing interest in drain tile in the Pacific Coast territory. While large jobs are not very numerous, there is considerably more interest being manifested than in former years, and a large number of small orders for tile are being filled. The demand for sewer pipe by dealers in small lots is getting to be a feature of the trade. This company is also shipping terra-cotta to Portland, Ore., for the Couch school.

The Los Angeles Pressed Brick Company of Los Angeles and Richmond, Cal., through the United Materials Company, its San Francisco selling agent, has taken out a license to manufacturer "Rug" brick under the patent held by the Hocking Valley Products Company. This is a rough texture brick which will be manufactured at both the Los Angeles and the Richmond plants. The United Materials Company now has

The CANTON is the Grate for the Plant that Counts the Cost

CONVENIENCE, ECONOMY and DURABILITY are the three important features which, combined with simplicity of parts and ease of installation, must convince clayworkers of the unusual merit of the Canton Grate.

With its use every pound of coal is made to yield its full value, resulting in a saving of from 25 to 33⅓% on fuel, and a proportionate amount on labor. Absolute control of oxidation and reduction is also insured.

These are only a few of the many advantages to be gained through the use of the Canton Shaking and Dumping Grate—sufficient to convince you that you should investigate further.

Bulletin B contains additional information

The Canton Grate Co.
Canton, Ohio

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA. – CHICAGO, ILL.

The Cement for Paving Brick Grout

Lehigh is High in Strength, Uniform in Color and Fineness. You Don't Have to Guess with Lehigh.

Specify and Use Lehigh in all Brickwork. Remember the Mortar Joint is an Important Factor in the Wall.

Use Lehigh and Cease to Worry.

It Assures Satisfaction Under All Conditions.

LEHIGH PORTLAND CEMENT

"NUGGET"

Bearing Metal

FITS YOUR LADLES

Guaranteed
MOST *Economical and Efficient*
For
Brick and Clay Working Machinery
Because
Exhaustive research and practical tests have proven that its hardness assures great wear resistance—its high compressive strength enables it to withstand heavy duty. Why don't you let us prove it?

Price, 15 cents per pound, delivered.

Manufactured Solely by
The Cleveland Alloys Co.
Bearing Metal Experts
CLEVELAND OHIO

Baird

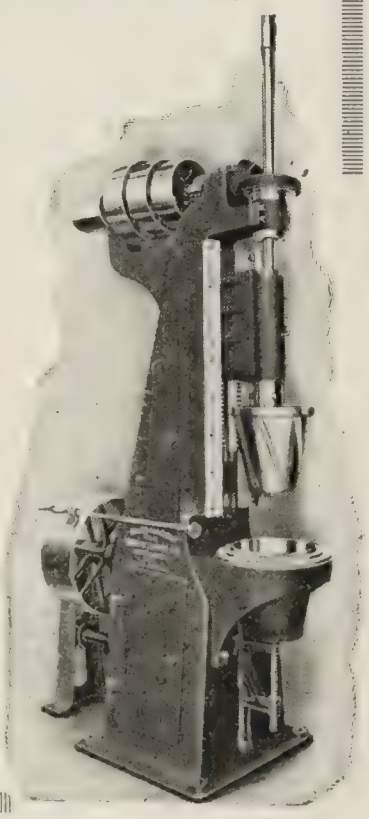
Pot Molding Machinery

We specialize in Machines for the Manufacture of Pottery

and Guarantee Every One We Sell.

Write us for information.

Baird Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.



on display in the Varied Industries Building at the Panama-Pacific Exposition in San Francisco several handsome panels of this "Rug" brick.

At a recent meeting of the stockholders of the Niles Brick Company, Niles, Cal., a proposition was submitted by the California Pottery Company, Oakland, Cal., to purchase the holdings of the Niles company for $60,000. It is understood that the pottery concern has outgrown its present quarters and wishes to enlarge its plant. It offered to guarantee the expenditure of $20,000 in improvements on the Niles plant within ninety days of purchase. No action was taken at the meeting beyond appointing a committee to consider the proposal. Among the parties interested in the Niles company it is believed that the offer of the California Pottery Company will be accepted, but it has been pointed out that quite a large amount of legal action will have to be taken before this can be accomplished.

CONNECTICUT

The police of Berlin, Conn., are investigating the fire which destroyed a building in the yards of the Kensington Brick Company recently. The building, a new structure, was used as a boarding house and there is suspicion that the fire was of incendiary origin. During the brickmaking season the house accommodates about thirty laborers.

DELAWARE

The Margaret Tile, Brick and Coal Company has been incorporated at Dover, Del., with a capital stock of $150,000.

DISTRICT OF COLUMBIA

L. Perry West, of the West Brothers Brick Company, Washington, D. C., has just returned from a trip to Philadelphia.

Washington, D. C., brick manufacturers are supplying the city with 200,000 brick per day, according to figures given by one of the local brick men. This is considered a good demand for this time of the year. All of the brick men express the opinion that business is much better and they are optimistic regarding the spring trade.

The Washington, D. C., office of the Hydraulic-Press Brick Company of St. Louis, Mo., reports the obtaining of a contract for furnishing the face-brick for the new city hall at Richmond, Va. The new structure will cost in the neighborhood of $300,000. They also report a contract for furnishing a light grey face-brick for a new department store at Pelham, Ga., to cost about the same amount.

FLORIDA

The Altamaha Sand and Brick Company, Jacksonville, Fla., has been incorporated by G. Hall White, F. L. Sage and J. F. English to engage in the general handling of building and road materials. The capital stock of the new company is $15,000.

GEORGIA

P. R. Morrison, secretary and treasurer of the Alto Face Brick Company of Rome, Ga., reports that the prospects for business in the territory served by his plant seem so good that the company felt justified in resuming operations, which it did on the 2nd inst. It looks as though the depression from which the South has suffered so long is about to change to a more prosperous state of affairs.

IDAHO

D. H. Kirk has been elected president and W. T. Shockley secretary of the Couer d'Alene Clay Company of Coeur d'Alene, Idaho.

The Idaho Fire Brick Company, of Troy, Idaho, has received two large contracts from the Pacific Coast Con-

densed Milk Company for work to be done at Chehalis and Everson, Wash.

ILLINOIS

The capital stock of the Acme Brick Company, Chicago, Ill., has been increased from $50,000 to $100,000.

Anderson Skinner has sold his interest in the Wenona Tile and Brick Works, Wenona, Ill., and has taken over an interest in the Minonk Brick and Tile Works, at Minonk, Ill.

Wisconsin, while not ranking very high as a producer of clay products, bids fair to become a very good consumer of these wares. An indication of this is in the amount of burned clay being used in the construction of farm buildings in that state. Frank W. Darling, of the Clay Products Company, Chicago, states that his company expects to get twice as much business from Wisconsin this year as from any other state.

William J. Gilbert, president of the Chicago Fire Brick Company, Chicago, Ill., has made a record as a real estate operator. With Arthur W. Egan, he managed to clear a profit of $33,800 on a parcel of land in exactly one week. The deal involved 89.2 acres of property in Oak Park, a suburb of Chicago. A week after the purchase of this land, Mr. Gilbert reported its sale to a real estate firm at the profit above mentioned.

The Patoka Brick and Tile Company, Huntingburg, Ind., has increased its capital stock to $50,000.

There seems to be some let-up in the business depression, for the S. S. Kimbell Brick Company, with offices in Chicago, reports that its sales for January and February of this year have exceeded the previous records for the same two months for several years. A large number of good sized operations are now under way, including schools and additions to institutions of a similar nature. In general, a good season is being looked forward to by the men who are selling brick in the "I Will" city.

Built with brick and fire-resistant throughout, the new Hotel Custer at Galesburg, Ill., presents an ornate and imposing appearance. In the construction of the first story of the building, a light buff pressed-brick was used, while the remaining four stories are built with a dark colored brick. Throughout the first story, to better emphasize the feeling of solidity, the mortar joints above and below every six course of brick are raked out and all of the openings, windows, doorways, and so on, are arched. The hotel is advantageously located in the business section of the city and is modern in every respect.

The Decatur Brick Company, Decatur, Ill., is now installing an additional line of machinery to manufacture hollow building tile. The company at present is manufacturing about twenty-two different shades and grades of building brick, some of which were used in the construction of the Power's Block, Elks' Hall and other large buildings in Decatur. The new line of hollow ware will be on the market within a few weeks. Much of the company's product is shipped over the state, as well as to other states and for this reason, the capacity of the plant is being increased. The raw material used in the manufacture of its products is shipped from the company's shale pit at Springfield, two hundred tons being used every day. The capacity of the plant is about one hundred thousand brick per day.

INDIANA

Jacob H. Hilkene, city building commissioner, of Indianapolis, Ind., believes that the outlook for a busy building season for 1915 in that city is exceptionally good. Although building ordinarily does not start for several weeks, Mr. Hilkene's desk is piled high with plans to be approved and he has word that more plans are on the way.

The Standard Brick Manufacturing Company of Evans-

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O., in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook.s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

Vigo, Ohio

C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***

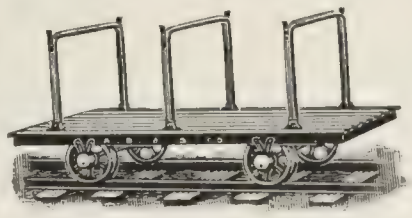


No. 217-E. Side Dump Car Equipped with Motor

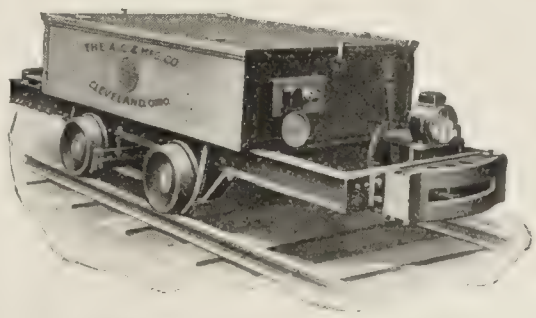
ATLAS
High Efficiency
Cars and
Electric Locomotives

REDUCE YOUR HANDLING COSTS

By the Purchase of Efficient Equipment



No. 126 Double Deck Dryer Car



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.

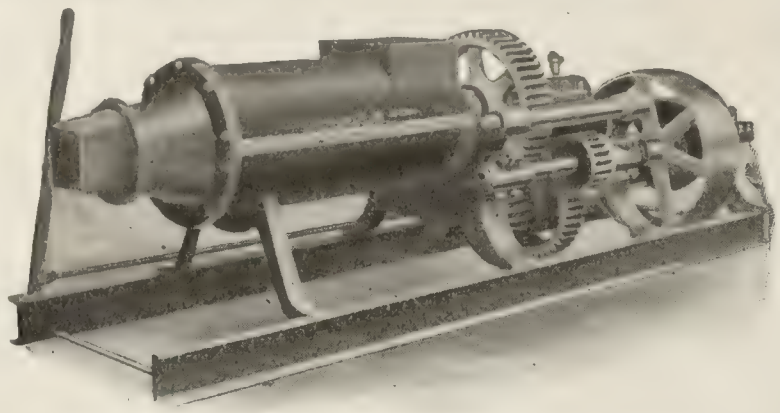
Dept. I

1287 Marquette Road, Cleveland, Ohio

SCHULTZ EQUIPMENT

For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

Telephone Monroe 1629

We also make a complete line of Power Transmission Appliances, Engines and Boilers,

HOW TO ANALYZE CLAY

A Practical Work for Practical Men

An aid to beginners and full instructions for making clay analysis

64 Pages with Illustrations
By HOLDEN M. ASHBY

PRICE
$1.00
POSTPAID

"BRICK AND CLAY RECORD"

ville, Ind., received a compliment recently when the government engineers, engaged on the work of deepening the channel of the Ohio river, specified that the brick to be used in Dam 43, which is near Louisville and opposite West Point, Ky., shall be of a grade equal to that manufactured by the Standard Company. This company has been furnishing the brick for similar work done on Green river by the government.

The Lutz bill, providing for the organization, incorporation and management of mutual insurance corporations of certain classes, has been passed by the Indiana House of Representatives. This measure has grown out of the possible passage of the Sare Workmen's compensation bill now awaiting consideration in the Senate. The Lutz bill provides a means by which employers may organize mutual benefit associations to protect themselves under the workmen's compensation bill. The compensation bill does not make this provision, although it permits the organization of such companies.

Clay products manufacturing establishments located near Brazil, Ind., will be greatly handicapped by the passage of another Lutz bill, which is designed to prevent the stripping of coal. Nearly every clay plant in that vicinity has a large pit from which both clay and coal are mined. The passage of the bill preventing the mining of the coal would, in all probability prohibit the mining of the clay under this coal, and thus seriously affect the industry.

Walter Acheson, retiring superintendent of the Indiana Paving Brick Company, Brazil, Ind., was recently honored by the officers and fellow employes of the company. He was presented with a handsome leather chair by the workmen and with a beautiful gold watch by Walker W. Winslow, owner and proprietor of the plant. Mr. and Mrs. Acheson will make their home in Martinsville, Ind., where Mr. Acheson assumes the management of the Adams Clay Products Company's plant, which was recently purchased by a company in which he and Professor C. C. Coleman, of Brazil, are financially interested. The gifts presented to Mr. Acheson attest the high esteem and respect in which the owners and the employes of the plant held their superintendent.

IOWA

W. Guy McMillan has bought out G. L. Dutton and will, in the future, be alone in the conduct of the Keota Brick and Tile Manufacturing Company, of Keota, Iowa.

The Union Electric Company of Dubuque, Ia., has asked the city council for permission to remove the creosoted block paving from between its tracks and in their place lay down a substantial pavement of brick. The company complains that the creosoted blocks are constantly "heaving" and causing trouble to it in the operation of its street cars.

KANSAS

The Kansas Buff Brick Company, Buffville, Kan., is now supplying fifty car loads of common and face-brick for the government library building at Fort Leavenworth, Kan. This company also has made several changes in its officers. F. C. LaFountain has been placed in charge of the Kansas City office of the company to succeed A. G. Bodwell, who has resigned to go into the brick business for himself. Mr. LaFountain was in charge of the Kansas City office until a year ago, when he was transferred to the plant at Buffville, Kan. He assumed his new office on March first.

KENTUCKY

The new building for the State National Bank, Main and Ann streets, Frankfort, Ky., will be of terra-cotta. The Bankers' Building Bureau of New York, was awarded the contract, which amounts to $30,000. White terra-cotta

will be used throughout and the drawings of the architects indicate that the building will be one of great beauty.

M. J. Bannon, president of the Bannon Pipe Company, Louisville, has said that business was good, considering conditions generally, and that the company's brick and sewer pipe plants are both in operation on practically full time. A. P. McDonald, sales manager, who with his wife has been away on a trip of three weeks, has returned to Louisville.

Oscar Hillenbrand, of the Hillenbrand Brick Manufacturing Company, Louisville, reports that the company's plant in East Louisville has resumed operations after a short shut-down. The plant is now busy filling orders for about 400,000 or 500,000 brick. During the past two weeks Mr. Hillenbrand said business has begun to improve and that his company is very much pleased with the outlook.

Full time operations continue at the plant of the Coral Ridge Clay Products Company, Coral Ridge, Ky. The company has been carrying an advertisement in the local papers emphasizing the fact that it manufactures a shale brick. George H. Fiedler, general manager of the company, spent several days in Chicago the first part of March on business for the company.

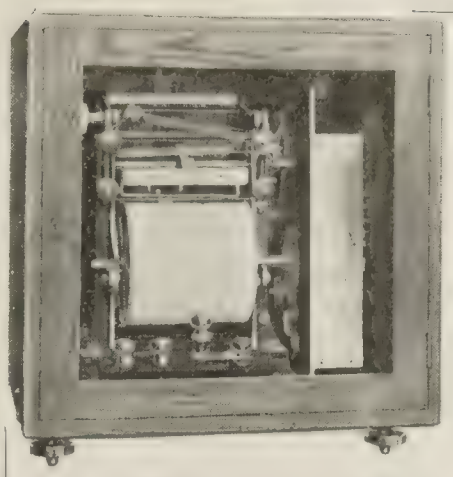
A gain of $120,000 in the amount of building permits issued was shown by the February totals in the office of the city building inspector of Louisville. This is considered promising and a sure indication of an early revival of building in Louisville. With orders on hand and big projects being discussed, the brick and tile makers have every reason to feel cheerful.

Eighty-seven of the brick-paved streets of Louisville, or sections of them, are laid in "Medora" brick, manufactured by the Medora Shale Brick Manufacturing Company, of Medora, Ind. This fact is being made use of by that company and the G. W. Gosnell Company, the contractors who laid the brick, in their joint advertising campaign in Louisville papers. A list of the streets is given in the advertisements, as is also the year in which the pavements were laid.

The Brecher-Buck Company, of Louisville, which is the oldest mantel and tile concern in that city, is moving from its store building on Walnut street, between Third and Fourth, to a new location on the south side of Market street, between Third and Fourth streets. The building is being remodeled for the new occupants. The company was located on Jefferson street, between Fourth and Fifth for a number of years, and on Walnut street for about four years.

After only a few months of use the half mile of concrete road built on the Bardtown road, running from the city limits of Louisville, Ky., to Doup's Point, is declared to have been a complete failure. This road was constructed last summer under the supervision of expert engineers representing the Louisville Automobile Club, Jefferson County, Ky., and also those of the concrete interests. It was put into service with a big celebration and dedicatory ceremonies in which a number of the public men of Louisville took part.

The Louisville Brick Company, Louisville, has shut down its plant for a short time to go over certain parts of the equipment. Joe Nevin, manager of the company, said that he is still making deliveries to the several school jobs for which he has the contracts, and that business for the immediate future looks good. The company's property was threatened by a recent fire which destroyed the garage and automobile of a resident whose property adjoins that of the company on Rudd avenue. The watchman at the brick plant,



A Time-Tried— A Perfect Recording Pyrometer

Tycos No. 4300

This and many others fully described in Booklet No. 4013—let us send it.

Tycos Pyrometers

Practical—Dependable—Guaranteed

Rare Metal All Types Ceramic Kilns.

Fery Radiation Portable Inspection or Permanent Installation.

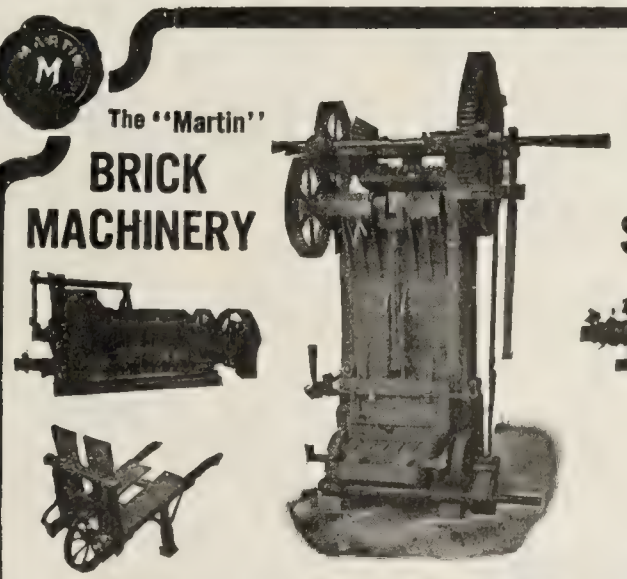
Base Metal Producers of Gas Fired Kilns. Recording Thermometers for Driers.

We inspect Ceramic Plants, lay out complete plans for Pyrometer Installations, supply working drawings and furnish services of Engineer to supervise installations of Tycos Pyrometers.

Whether one Kiln Plant or 100 we shall be pleased to receive your inquiries—suggestions and literature are free—our service prompt and efficient.

Taylor-Cambridge Division
Taylor Instrument Companies
ROCHESTER, N. Y.

The "Martin" BRICK MACHINERY



Modern YARD SUPPLIES







Soft-Mud or Stiff-Mud Processes

Get Our Plans

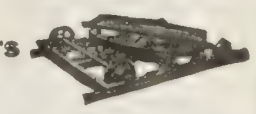
Dry or Wet Grinding Pans

Barrows and Trucks
Disintegrators

Clay Cars--Dryer Cars
Hoisting Drums

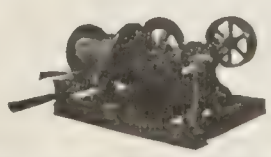






The Henry Martin Brick Machine Mfg. Co.

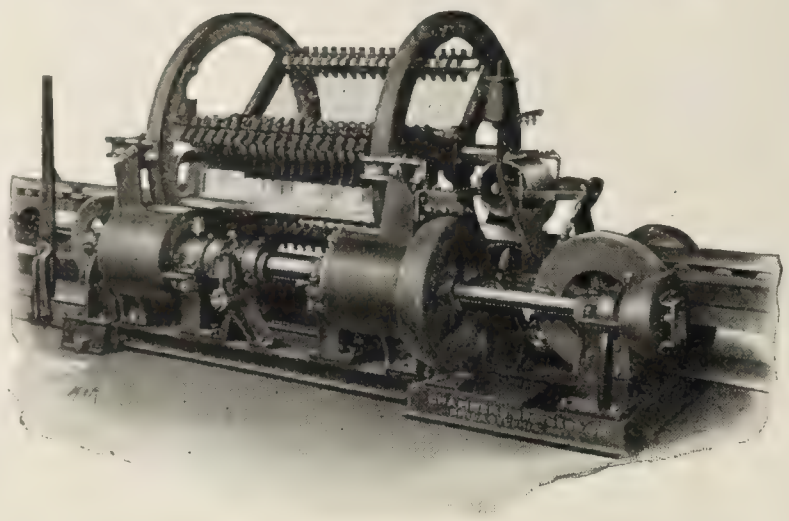
GET MARTIN PRICE LIST



LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG

New Multiple Brick Cutter



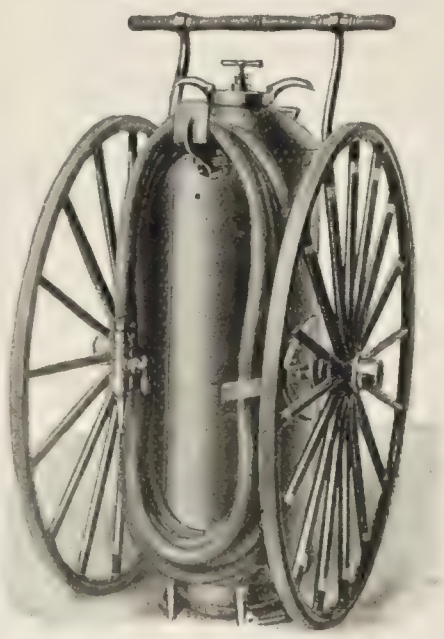
THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.
40 Liberty St.
UTICA, N. Y.

however, discovered the flames in time to prevent their being communicated to other buildings.

The plant of the Southern Brick and Tile Company, at Bishop, Ky., resumed operations to capacity on March 8, after a shut-down since February 10, during which the company thoroughly overhauled its equipment. It is reported that some time during the coming season it will add another product to its already large list, though there is no information available as yet as to what this item will be. T. Bishop, superintendent of the company, is meeting with increasing success in his drain tile work, and, favored by good weather, has spent most of his time on this work. Orders on file at the Southern Company's offices will keep the plant going indefinitely.

With orders for a large number of brick ahead, and a good volume of spring and early summer business in prospect, most of the Louisville brick plants are in operation on practically full time, after shut-downs extending over different periods of time during the past few months in which the plants and machinery were overhauled. The volume of business at present has not developed to the extent where the brickmakers can see an indefinite run ahead, but the fact that February gave an increase in the amount of building for which permits were issued at the city building inspector's office, promises well for the early spring months, and there are a number of projects under way for extensive building operations during the summer. Money is easy again in Louisville and the banks are showing a disposition to lend for building purposes.

An interesting development which has just been made public through the announcement in the press is that a drain tile installation is to be made a part of the Kentucky State Fair equipment in Louisville, if plans work out. F. Shafer of the Bureau of Drainage, United States Department of Agriculture; John W. Newman, State Commissioner of Agriculture, and F. E. Merriman, County Crop Agent, are conferring on the project by which three acres would be added to the state fair grounds. The intention is to use tile to drain a large pond on the grounds which grounds belonging to the state and which is at present a nuisance. When this pond has been drained, the result available for illustration to the thousands of farmers who visit the fair each fall, according to Mr. Shafer, will be a long step in the work of his bureau in showing the rural landowners what can be done with tile drains.

Mr. Shafer is soon to go to Paducah, Ky., where he will assist in establishing an experimental tile drained tract of twelve acres. Kentucky officials and the owner of the land, C. C. Burkhart, will co-operate with Mr. Shafer and it is expected that the work will be viewed by thousands of farmers in that section of the country, where there is much need of drainage. While at Paducah, Mr. Shafer will meet those interested in drainage of the Mayfield (Ky.) district, which is a proposition involving 25,000 acres in McCracken, Graves, Ballard and Carlisle counties. While the project itself will not involve tile, it will open up a large area which is sorely in need of tiling. The government is furnishing the tile for the Burkhart installation and the owner of the land is paying for the labor. About three-fifths of the land in McCracken county needs drainage and the farmers in that county are watching the installation on the Burkhart farm with much interest. It is sure to prove successful and will be followed beyond a doubt by numerous other tile installations in the county.

LOUISIANA

Vaccaro Brothers' steamship and fruit company, has placed

a large brick order with the Fritz Jahncke Company, of New Orleans, the material to be used in construction work on the Vaccaro company's Honduras properties. This is said to be the first of a number of large orders of the kind, opening the way for further clay trade with the Central American republics.

The commercialization of the pottery output of Newcomb College, the woman's department of Tulane University, was urged in New Orleans recently by Henry Turner Bailey in a talk at Newcomb Hall. That the pottery output of the college be increased to larger commercial proportions and that it be marketed in accordance with modern business methods, had been urged previously, but never before with such force. It is stated that, largely as a result of Mr. Bailey's talk, steps will be taken by the college authorities to realize on the idea. The college bears a high reputation for work of this kind, as well as for other art works, and this product, which is offered at long intervals in small quantities, is bought up quickly.

MASSACHUSETTS

Frank Newell, overseer of the New England Brick Company's plant at Unionville, Mass., has been seriously ill, but is now reported as being on the road to complete recovery.

The Argo Tile and Pottery Company, Boston, Mass., has been incorporated with a capital stock of $15,000 by Joseph W. Moore, Maxwell A. Metzner and Henry S. Ormsby.

Boston representatives of brick manufacturers report increasing inquiries and indications of an early improvement in orders. The various moves to have building operations resumed earlier than usual in order to provide work for the unemployed, are having their effect and the demand for brick and other building materials is already improving.

MICHIGAN

William Thomas, of the Thomas Brothers Brick Company, Detroit, has returned from a long vacation spent in the South.

Many Michigan brick makers are wearing as a fob, the badge presented by "Brick and Clay Record," at the recent Detroit convention.

Building permits to the sum of one hundred and twenty-five were issued during the first week in March in the city of Detroit, most of which called for the use of clay products.

Building permits in Detroit for the month of February aggregated $1,207,215. Of the permits for new construction, forty-two were for brick, costing $455,575; of the sixty permits issued for additions, twenty-nine were for brick, costing $154,206.

John S. Haggerty, a Detroit brick manufacturer, has departed for the Panama-Pacific Exposition at San Francisco. He expects to return to Detroit about the 10th of April. John A. Mercier, another Detroit brick manufacturer, contemplates leaving later in the month to attend the exposition.

For the first time in the history of the Detroit Board of Commerce, manufacturers and dealers of building materials are represented on the board of directors. At the recent election, Charles H. Bryan, of the firm of Mercier, Bryan and Larkins Brick Company and a prominent member of the Builders and Traders' Exchange, was elected as a member of the board.

The Detroit Brick Manufacturers and Dealers' Association will soon distribute among architects, contractors and large builders, a booklet with views of the recent Edison concrete fire, showing the destroyed buildings "before and after." The association is also about to distribute thirty-five

Do you make Silo Blocks?



Note the Vertical Rod in Door Frame.

Why Not?

There's lots of money in it if you make the right kind.

DURO

Everlasting Clay Block Silos

will increase your income.

Construction is simple, yet it makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.

MOWRYSTOWN BRICK & TILE CO.
MOWRYSTOWN, OHIO

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

A Guaranteed

Hook System of Burning Clay Products

Will—

Reduce your coal expenditures.

Reduce your time of burning.

Will—

Decrease the number of kilns needed, and so lower the capital investment.

Because—

A Hook Kiln

burns any kind of ware in a shorter length of time, and it does it with less coal. A Hook Kiln can be and is TURNED oftener than other types.

Therefore—

This system will lower your running expenses, will increase your capacity, and the actual plant investment is greatly reduced—

—and we can prove it

Hook Patent Kiln Co.

Main Office **Vigo, Ohio**

Canadian Office

250 Dufferin St. **Toronto, Ont.**

photographic albums showing views of bad construction where fire has wrought havoc.

MISSOURI

The Key-James Brick Company, Joplin, Mo., has been awarded the contract to supply the brick for the first new Baylor school building which is to be erected in that city. The order calls for 400,000 or forty carloads of brick, including the face-brick.

Damage to the extent of $100,000 was done by a recent fire in plant No. 3 of the Laclede-Christy Clay Products Company, Manchester and Sulphur Avenues, St. Louis, Mo. The interior of four buildings housing the machinery were destroyed, as was also several smaller buildings.

G. W. Thurston, secretary of the Western Paving Brick Association Kansas City, recently returned from a trip through Iowa in the interest of the association which he represents. Mr. Thurston then left the city for a trip through Texas, which will include visits to Dallas and Fort Worth.

NEBRASKA

The Smith Brick Company of Omaha, Nebr., has rebuilt its plant which was recently destroyed by fire. The new plant is a duplicate of the old one and is now ready for operation.

The Omaha Clay works, Omaha, Nebr., has rebuilt its plant and same is now in operation. The company has sold all of the brick that it had on hand, and as a new dryer and many new cars have been added to the equipment, it is ready to begin extensive operations.

NEW YORK

An improvement in building activities in New York is indicated by the recent sales of the Chestnut Ridge White Brick Company. This company has sold in three or four weeks, 90,000 face-brick for apartments in the Bronx, 85,000 for an apartment in Brooklyn, 100,000 for twenty-two houses in East New York, besides the completion of an order for 500,000 sold last year for one hundred and eleven houses in Ridgewood.

When the large plant of the Consolidated Brick Company, Horseheads, N. Y., opens up this spring, its motive power will have been changed from steam to electricity. President R. G. Eisenhart of the company tried out some motors on the fans last year and found the power so satisfactory and economical that he placed an order with the Elmira (N. Y.) Water, Light and Railroad Company to install motors for the entire plant, amounting in all to over three hundred horsepower. There will be seven motors in the plant when the complete installation is made.

OHIO

With more work on hand than is usual at this time of the year, the Moores-Coney Company, Cincinnati, looks for a very fair season, considering existing conditions. The company's line of clay products is complete, and it is able to offer to builders a very wide choice in burned clay materials.

The Youngstown Clay Products Company has been incorporated at Youngstown, Ohio, with a capital stock of $50,000, by John B. Malloy, H. T. McCartney, J. Boshim, W. Wright and J. A. Logan. The company will manufacture a line of building brick, and possibly other clay products.

William Powell, of the Cincinnati Brick Company, Cincinnati, Ohio, reports that he intends to open up his plant within a few weeks, or as soon as the normal spring demand begins to indicate the need of making more brick. At present, while there is plenty of work in sight, the company's winter reserve is holding out well.

In anticipation of an early resumption of activities among local builders, President John M. Stoner, of the Cincinnati

Clay Products Company, spent a week recently in visiting the brick plants whose products are handled by his company. He looks for a busy season in Cincinnati during the coming spring and summer, in view of the fact that a vast amount of work was postponed last year on account of the carpenters' strike.

At the annual meeting of the Portsmouth (Ohio) Paving Brick Company, held recently, the following officers were elected: Simon Labold, president; W. L. Hitchcock, vice-president; Carl Sprecker, secretary and Dan W. Conroy, treasurer. These officers, with J. C. Grubbs, compose the board of directors. The company did a good business in 1914, on account of the large number of brick roads built in Ohio, and anticipates an equally satisfactory business in 1915.

Home products were selected as far as possible in the letting of contracts for the construction of the handsome new nine-story Y. M. C. A. building in Canton, Ohio, recently. The Metropolitan Brick Company's "Tavern" brick, a chocolate colored, vitrified face-brick, will be used for the exterior of the building, while a cream-colored brick made by the Belden Brick Company will be used in various parts of the interior. The Metropolitan Company's brick will also be used in several other large jobs about to be started among which are the Y. M. C. A. buildings in Cleveland, Ohio, and Providence, R. I., as well as two other structures in Canton.

The Anders Shale Brick Company is the name of a newly incorporated concern in Cincinnati, although it by no means indicates the entry of a new company into the industry. The company, which was recently incorporated with a capital stock of $40,000, has taken over the plant and business of Anders Brothers, who have been in the trade for a considerable period. About a year ago the company secured a new location, at which it has since been manufacturing a high-grade shale brick, and the extensions and improvements incident to the development of the business, resulted in its incorporation. John Anders has been elected president, Theodore Anders secretary-treasurer and Adam Anders vice-president. With an unlimited amount of raw material available for its operations, the company will increase its capacity, according to President Anders, from 15,000 a day to 30,000 or 35,000 brick within the next three months.

OREGON

John Phillip of St. Helens, Ore., has secured the contract for furnishing 80,000 paving blocks to be used in paving Front Street in that city.

PENNSYLVANIA

Aaron B. Trout, a Civil War veteran and retired brick manufacturer of Pottstown, Pa., died after a brief illness, at the age of seventy-four years.

The Royalton Shale Brick Company, Royalton, Pa., has resumed operations at its plant after being idle for several months. The number of men at present employed at the plant is about fifty and from all indications, and from orders already booked, it looks as though the plant will be kept very busy during the spring months.

During a hearing before the Pennsylvania State Board of Charities, Henry F. Walton, of the Farview Insane Hospital Board stated that the institution desired funds with which to purchase a brickmaking machine, as there was plenty of clay on the property, as well as a considerable coal outcrop, to make easy the manufacture of brick for new additions to the hospital.

QUEBEC

The annual meeting of the Standard Clay Products Company, New Glasgow and St. Johns, Que., was held on February 15. The net earnings of the company were shown to



Low Price of Cotton Reduces Cost of Gandy Belting

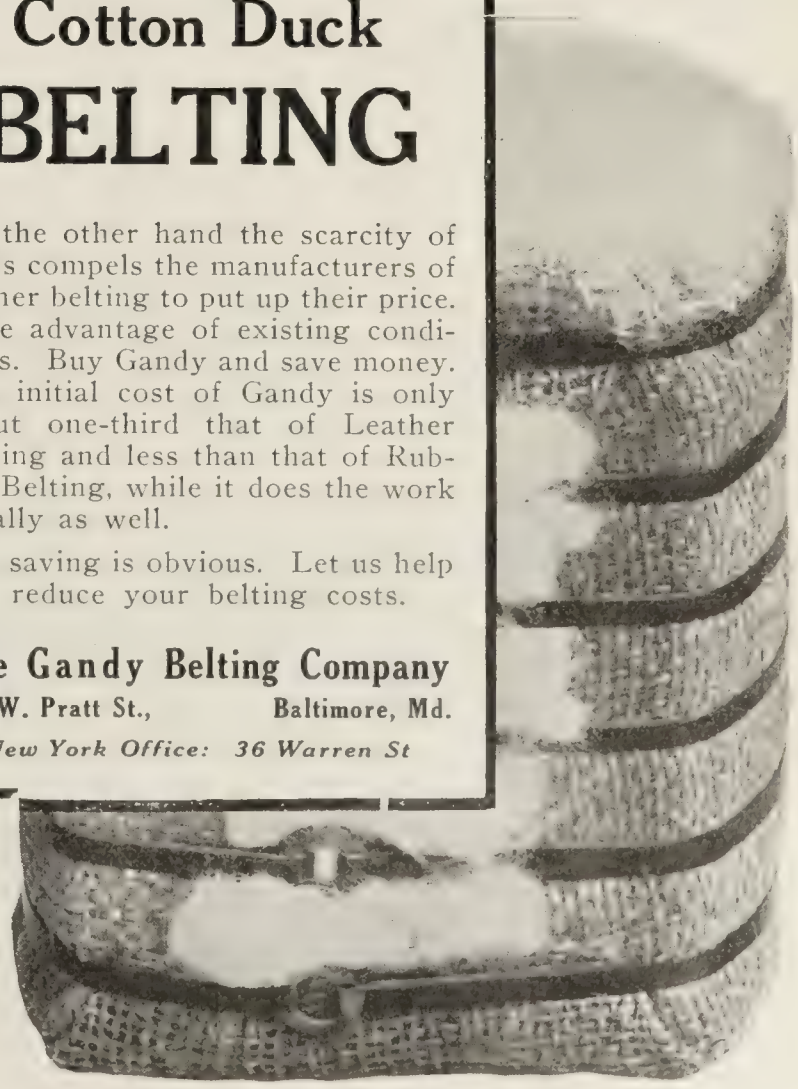
THE present low price of Cotton makes it possible for us, while maintaining strictly the high quality of our product, to reduce the price of

GANDY
Stitched Cotton Duck
BELTING

On the other hand the scarcity of hides compels the manufacturers of leather belting to put up their price. Take advantage of existing conditions. Buy Gandy and save money. The initial cost of Gandy is only about one-third that of Leather Belting and less than that of Rubber Belting, while it does the work equally as well.

The saving is obvious. Let us help you reduce your belting costs.

The Gandy Belting Company
732 W. Pratt St., Baltimore, Md.
New York Office: 36 Warren St





Patented May 2, 1911.

RAIN OR SHINE

Our first system

Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men."

Our last system

The Donnelly Brick Co., New Britain, Conn., says:

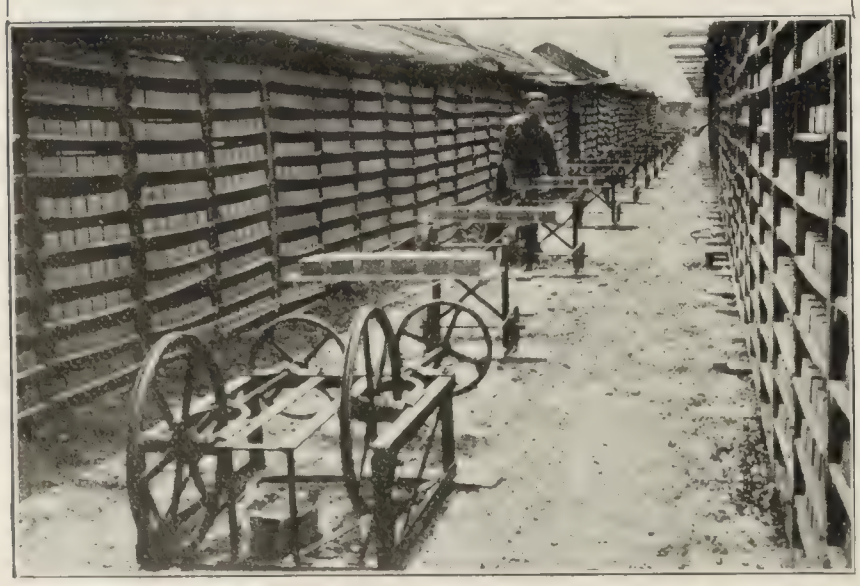
"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"

Write for literature and prices.

The Marinette Iron Works

C. J. Anderson & Son, Proprietors

Marinette, Wis.



be about 6½ per cent on the common stock, and this showing was made with only two of its factories operating.

SOUTH CAROLINA

The plant of the Charlotte Brick Company, Fort Mill, S. C., is operating to capacity, with plenty of orders on hand. The plant employs about one hundred and fifty men, and with a large amount of business in sight, it is believed that the plant will operate continuously for the rest of the year.

The joint legislative committee named to investigate the advisability of erecting a brick plant at the state farm in Kershaw county, South Carolina, has recommended that the matter be dropped. The committee found that the railroad facilities were not sufficient to meet the needs of a modern plant, and also that the work attached to operating a brick plant such as was proposed would hamper the superintendent of the penitentiary in the performance of his other duties. The house in the South Carolina legislature adopted the report of the committee.

WASHINGTON

The Denny-Renton Clay and Coal Company of Seattle, Wash., has completed the deliveries on its contract for the repaving of Yesler Way in Seattle.

The Far West Clay Construction Company of Tacoma, Wash., has moved its offices from 223 Tacoma building to 318 Perkins building in the same city.

The contract for the architectural terra-cotta to be used in constructing the two upper stories of the Kings county court house at Seattle, Wash., has been awarded to the Denny-Renton Clay and Coal Company for approximately $40,000. The award was made in competition with granite. The same company has completed delivery on a $20,000 contract for the Washington state normal school at Cheney.

WEST VIRGINIA

Fire caused by a broken gas stop, destroyed the plant of the Glenville Brick Company, corner of Baltimore Street and Pennsylvania Avenue, Glen Elk, near Clarksburg, W. Va. The damage it is estimated will total $8,000.

When it comes to talking of modest beginnings in the brick business, S. T. H. Holt of Phillippi, W. Va., seems to be holding the palm. His first outfit was two racks eighteen inches deep by six feet wide and eighteen feet long. He mixed his clay with a spade and by working from daydawn to darkness, succeeded at times in turning out as many as eight hundred brick per day. His first year's output was 47,000, which was increased during the second year to 59,000. The plant at Phillippi now operates by machinery and makes almost as many brick in a day as it used to make in a year.

With the Potteries

(*Continued from page* 574)

stands, pedestals and the like.

While there are only two inactive potteries, which were formerly engaged in the manufacture of domestic ware, now available for operation, there are more active kilns throughout the country than ever before. The idle potteries are the former Brunt Pottery Company's plant at East Liverpool, Ohio, and the Ford City Pottery plant, at Ford City, Pa. To take the place of these idle plants, one has been started at Clarksburg, W. Va., by the D. E. McNicol Pottery Company, of West Virginia, and the Consolidated Manufacturers Company has started a plant at Grafton, W. Va. Both of these plants have larger kiln capacity than either of the former

potteries. It is not likely that either of the two idle plants will resume the manufacture of domestic ware, although there has been some talk of the Ford City pottery being used for the manufacturing of electric porcelain lines. It is also related that before another year passes, the Clarksburg pottery will start to double its capacity.

It is now almost assured that a special meeting of the United States Potters' Association will be called this summer. It is this year that the National Brotherhood of Operative Potters will discuss possible changes in the wage scale at the annual convention at Atlantic City in July, and these changes will be up for discussion at a joint conference with the manufacturers' committee probably in August or September. The potters' association, however, will probably talk of a revision in the American standard list, upon which all manufacturers base their selling price. It has been pointed out that a number of changes should be made in this list to conform to present manufacturing conditions.

At Carrollton, Ohio, the Albright China Company is about completing a five-kiln plant, which will be under the management of M. F. Albright. The sagger makers have already started working at this plant, and several kilns of saggers have been fired. This plant has but one floor, thereby permitting the greatest efficiency in production, the clay entering at one end of the plant and the finished ware being shipped from the other.

It is reported and not denied that an East Palestine (Ohio) pottery manufacturer contemplates erecting a new pottery plant in West Virginia. The location has not been decided upon, although a number of sites have been inspected, both with reference to transportation facilities and cost of manufacture. There is no denying the fact that West Virginia is rapidly pushing forward as a leader in the production of domestic pottery wares, tile and sanitary goods.

Many improvements are contemplated at the plant of the Summit China Company, Akron, Ohio, which was recently taken over by the George H. Bowman Company, and other interests of Cleveland, Ohio. Several new kilns are to be built, a new body installed, and several new shapes placed on the market.

With additional kilns being erected at several plants in Sebring, the kiln capacity of the United States this fiscal year will show a remarkable increase. The value of the total production is expected to reach a new high level, and should imports be shut off entirely, the American potteries will experience the largest business in their history.

Plans are now being worked out for the establishment of a four-kiln pottery at New Cumberland, W. Va., which concern will make sanitary ware exclusively by an improved method.

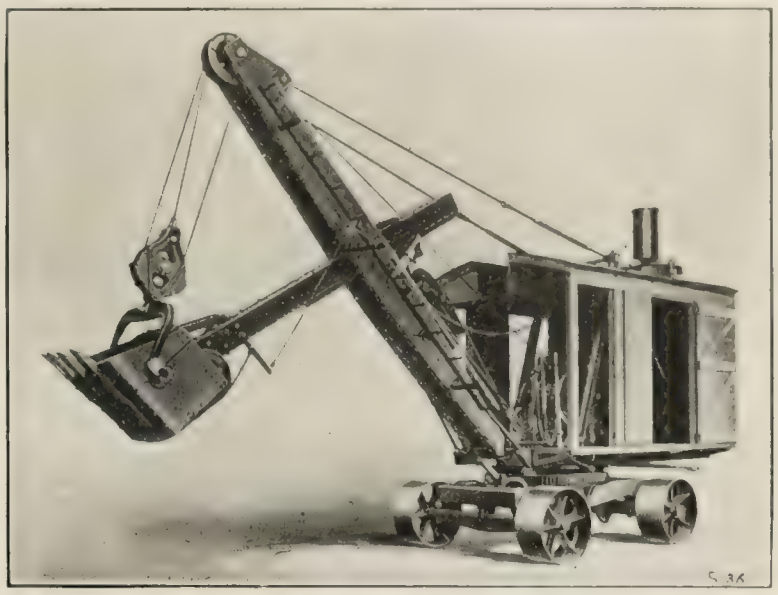
Freight Tariffs and Troubles

(*Continued from page* 578)

a wrong of the carrier but that that wrong has in fact operated to its injury."

Claims and Reparations

Among the interesting complaints filed during the past two weeks with the Interstate Commerce Commission was



Type B ¾ cu. yd. Erie Shovel.

ERIE
Revolving Shovels

Easily Operated by One Man
Not a Large Shovel—But

A Large Working Range

The type B shovel will make a through cut 50 ft. wide from one position. It will cut right up to the top of a 17½ ft. bank without leaving overhanging material which otherwise would have to be caved down by men on top of the bank. That's just one of the many advantages of the Type B ¾ cu. yd. Erie shovel. Just the right size for handling clay for brick plants with capacities up to 150,000 per day. It will handle the lighter shales too without blasting.

Investigate the thirty strong vital points of superiority of the Erie shovel.

Ask for Catalog A today sure.

BALL ENGINE CO.
ERIE, PA.

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press

Auger Brick Machines

Down Delivery Tile Mills

Oil Burning Equipment

Crude Oil Engines

Piano Wire Screens

Dry and Wet Pans

Soft Clay Brick Machines

Pug Mills

Wet and Dry Clay Disintegrators

Smooth and Conical Roll Crushers

Wood Moulds

Trucks and Barrows

Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.

20 W. Jackson Blvd. Chicago, Ill.

that of the Boston Brick Company, Inc., of Boston, Mass., against the Boston & Maine R. R., the Boston & Albany R. R. Company and the New York, New Haven & Hartford R. R. Company.

According to the facts set forth in this complaint the rates on common building brick from Gonic, N. H., to points on the defendant's lines are, "excessive, unreasonable, unjust per se and discriminatory as compared with rates from other points of production." The brick company further states, in the complaint, that it used to enjoy the same rates on its brick products as those in effect from Epping, N. H., but that the tariff grouping has been changed.

W. T. Hardison & Company of Nashville, Tenn, have also entered a complaint with the Commission against the Pennsylvania Railroad Company, the Philadelphia, Baltimore & Washington, the Southern Railway Company, and the Tennessee Central R. R. Company, alleging that shipments of fire brick were made on April 23, 1913, from Nashville, Tenn., to Hyndman, Pa., having a total weight of 63,000 pounds. The charges made on the shipment were at the rate of $5.60 per ton, when they should have been but $3.85 per ton, the extra charges being made because of the indirect route by which the bricks were shipped.

The Metropolitan Paving Brick Company, of Canton, Ohio, has also entered a complaint against the New York Central R. R. Company; the Pennsylvania Railroad Company; the New York & Long Branch R. R. Company and the Wheeling & Lake Erie R. R. Company, its complaint being based on shipments of fifty-seven carloads of paving brick during the months of August and September, 1913, from Canton to Long Branch, N. J., that were charged at the rate of $4,000 per net ton, which rates are claimed to be "unjust and unreasonable." A refund of $360.75, which is alleged to have been the amount of the overcharge, is claimed.

A complaint on tile rates has been filed with the Commissioners by the C. H. Young Company of St. Paul, Minn., against the Chicago, Great Western R. R. Company, the Chicago, Rock Island & Pacific Railway Company, the Kansas City Terminal Company and the St. Louis & San Francisco R. R. Company, according to which, three carloads were shipped in March, 1913, from St. Paul, Minn., to Kansas City, Mo., a rate of 16c and 17c respectively per 100 pounds being charged. Fifteen carloads were shipped in addition, during the period from April to December, 1913, from and to said places. The carriers were ordered by the Commission to put into effect a rate of 12c per 100 pounds on December 10, 1913. The complainants charge that they should be allowed reparation on the overcharges made, which amounted to $483.99.

WATSONTOWN CASE WON BY BRICKMAKERS

The Watsontown Brick Company, of Watsontown, Pa., in its case No. 6895, has won a victory over the Northern Central Railway Company et al., regarding certain rates which were claimed to be unreasonable. In handing down their opinion in the case the Commissioners say in their brief: "Rate of $3.60 per ton on brick from Watsontown, Pa., to Chicago, Ill., found to be unreasonable, and a reasonable rate prescribed for the future." During the course of the hearing in this case the defendant railroads did not try to defend the rate of $3.60 but offered to put a rate of $3.15 into effect. This the complainants refused to accept. They stated that the rate should not

exceed $2.35 per ton. Reparation will also be awarded in the case as soon as the proper statistical report has been made to the Commissioners.

The Commissioners have allowed the following reparations of interest to our readers:

To the Central Connecticut Brick Company against the Boston & Albany R. R. Company et al. A refund of $118.66 was allowed on account of the unreasonable charges collected on five carloads of common brick shipped from Middletown, Conn., to Indian Orchard, Mass., during the months of April and May, 1912.

To the National Fireproofing Company, vs. the Chicago, Rock Island & Pacific R. R. Company, et al. A refund of $3.28 was allowed because of the unreasonable charges on two carloads of hollow building tile shipped on July 10 and 14, 1912, from Ottawa, Ill., to Hobart, Ind.

To the W. S. Dickey Clay Manufacturing Company vs. the Atchison, Topeka & Santa Fe Railway Company. A refund of $7.08 was allowed on account of the unreasonable rate charged on one carload of drain tile shipped from Rich Hill, Mo., to Swanwick, Mo., on March 13, 1914.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points

From Albany, N. Y., clay, to Flemington and Trenton, N. J., $2.36 per net ton; to Sewaren, N. J., $1.84 per net ton.

From Allentown, Pa., brick and clay products, to Scranton, Pa., $1.26 per net ton.

From Amboy and Syracuse, N. Y., brick, to Eaton and Oriskany Falls, N. Y., $1.58 per net ton.

From Amenia, N. Y., common brick, to Poughkeepsie, N. Y., $1.84 per net ton.

From Bacon Hill, Md., clay, to Springs Mill, Pa., $1.48 per net ton.

From Beech Creek, Bigler, Clearfield, Clymer, Faunce, Irvona, Karthaus, Lock Haven, Krebs, Lumber, Mehaffey, Mill Hall, Monument, Orviston, Patton, Phillipsburg, Snow Shoe, Wallaceton and Woodland, Pa., brick and articles taking the same rate, to Troy, N. Y., when destined to Watervliet, N. Y., $1.78 per net ton.

From Brooklyn and New York, N. Y., stations, and Jersey City and Undercliff, N. J., fire brick and fire brick shapes, to Syracuse and Solvay, N. Y., $2.10 per net ton.

From Brownstone and Guth, Pa., brick, to Andover, N. J., $1.84 per net ton; to Greycourt, N. Y., $1.90 per net ton.

From Carteret, Chrome, Keasbeys, Maurer, Perth Amboy and Sewaren, N. J., fire brick, to Waterloo, Va., $2.52 per net ton.

From Carteret, Chrome, Clifford, Keasbeys, Lorrilard, Matawan, Perth Amboy and Sewaren, N. J., brick and clay products, to Albert, Beisels, Conyngham, Hazelton, West Hazelton and Wilkesbarre, Pa., $1.78 per net ton.

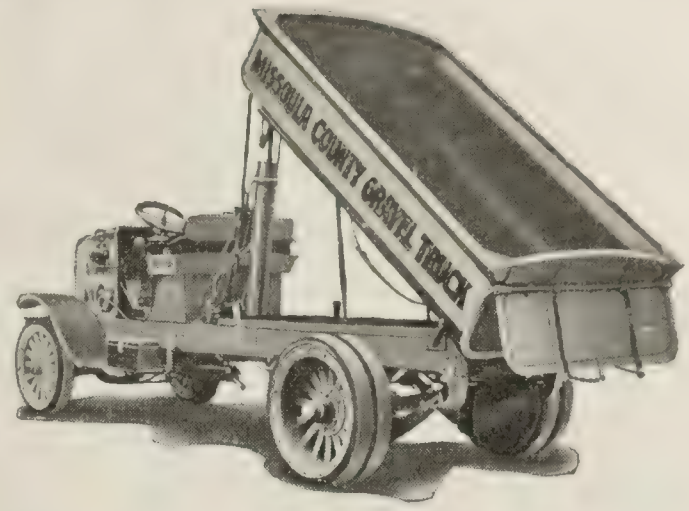
From Carteret, Chrome, Keasbeys, Maurer, Perth Amboy and Sewaren, N. J., fire clay, to Cornwall, Pa., $1.68 per net ton.

From Catasauqua, Pa., fireproofing, to Boston, Mass., and Portland, Me., $2.84 per net ton.

From Cementon, Pa., brick and clay products, to Mt. Savage, Md., $2.16 per net ton.

From Chester and Marcus Hook, Pa., fire brick, to Pennsylvania Salt Works Siding, Philadelphia, Pa., $1.00 per net ton.

From Clearfield, Curwensville and Widemore, Pa., paving



This Truck Will Save Big Money

A KisselKar Truck equipped with dump body operated by means of a hydraulic lift, discharges its load instantaneously.

It saves thousands of dollars in the haulage of building and paving material. It requires only the driver to operate it and he does not have to leave his seat to do so.

Whether with this dump body or any other style of body that may be better adapted to the work in hand, a KisselKar Truck chassis is an **incomparable** mount.

KisselKar Trucks

IN SIX SIZES

Let us point out to you in detail the superior construction and workmanship of the KisselKar Trucks.

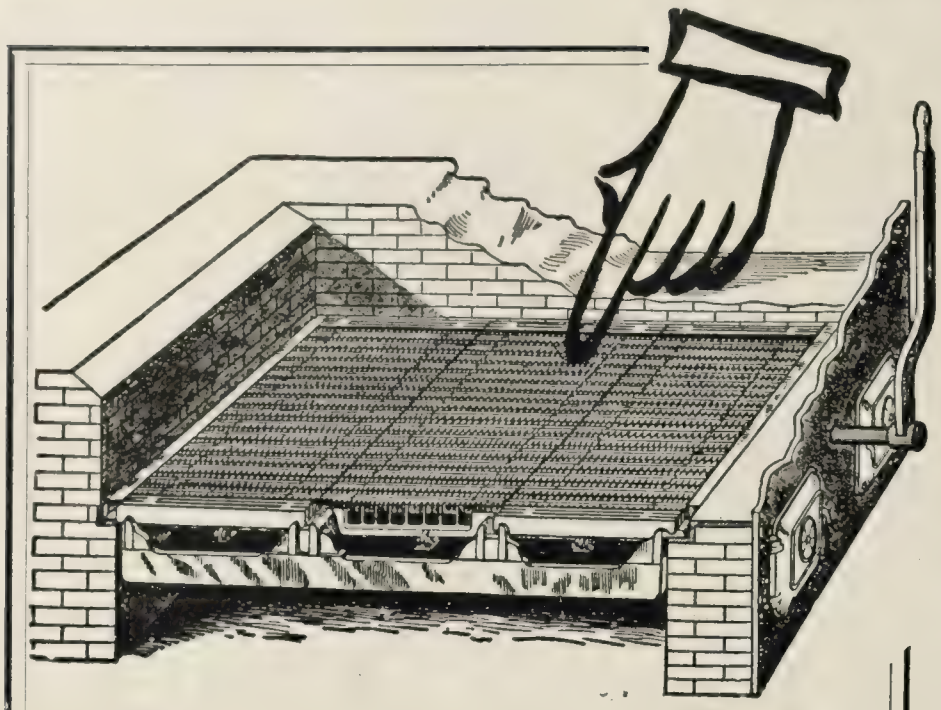
Let us give you the names of others in **your line of business** who have found them money-savers and money-makers.

Let us send you a copy of our truck portfolio illustrating hundreds of these sturdy vehicles as they appear in the service of owners.

The more carefully you investigate trucks the more certain it is that you will select KisselKar Trucks.

Kissel Motor Car Co., 568 Kissel Avenue, Hartford, Wis.

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Baltimore, Pittsburgh, Cleveland, Detroit, San Francisco, Los Angeles, Seattle, Buffalo, Rochester, Columbus, and 300 other principal points.



More Steam from Your Boilers

Reduced cost of fuel — *burn any coal.*
More dividends for your stockholders.

These advantages are being accomplished by using

Martin Grates

Read the following letter:

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10, 1914.

Martin Grate Co., Chicago, Ill.

Gentlemen:—

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.
(Signed) C. A. Reaver, Secy.

The Martin Grate Co.

347 S. Dearborn St. Chicago, Ill.

brick, to Elmira and Watkins, N. Y., $2.00 per net ton.

From Eagleswood, Fords, Keasbeys, Maurer and Perth Amboy, N. J., clay, to St. Regis Falls, N. Y., $4.30 per net ton.

From Eagleswood, Perth Amboy, Perth Junction, Fords, Keasbeys' Metuchen and Ostranders Siding, N. J., brick, to St. Regis Falls, N. Y., $4.30 per net ton.

From Easton, Pa., clay, to Altona, Champlain, Chateaugay, Clinton, Mooers Forks, Mooers Junction and Ellenburg, N. Y., 17.9c per cwt.; to Portland, Me., 13.9c per cwt.

From Elmira and Horseheads, N. Y., brick and clay products, to Albany, N. Y., $1.58 per net ton; to Scranton, Pa., $1.32 per net ton.

From Embrum and Russell, Ont., brick, to Massena Springs, N. Y., $1.80 per net ton; to Bay Pond, Brandon, and Derrick, N. Y., $1.48 per net ton; to Dickenson Centre and St. Regis Falls, N. Y., $1.26 per net ton; to Tupper Lake and Tupper Lake Junction, $1.58 per net ton; to Nyando, N. Y., 74c per net ton.

From Freeman, Hutchins and Mt. Jewett, Pa., fire clay, to Jewettville and Salamanca, N. Y., 79c per net ton; to Rocheshter, Garbutt and Buffalo, N. Y., and Indiana, Pa., $1.05 per net ton; to Bradford, Pa., 47c per net ton.

From Inkerman, Pa., common brick, to Dunmore and Pittston, Pa., 63c per net ton; to Hawley, Pa., $1.16 per net ton; to Jessup and Scranton, Pa., 68c per net ton; to Port Jervis, N. Y., $1.68 per net ton; to Lehigh and Moscow, Pa., 89c per net ton.

From Keasbeys, Maurer, Perth Amboy and Sewaren, N. J., clay, to Annapolis, Md., $2.74 per net ton.

From Kushequa, Pa., brick, to Watertown, N. Y., $2.84 per net ton.

From Lehigh Gap and Palmerton, Pa., brick and fireproofing, to Bluefield, W. Va., $5.26 per net ton.

From Lehigh Gap and Palmerton, Pa., common and face-brick, to Annapolis, Md., $2.74 per net ton.

From Mertztown, Pa., clay, to Cliffwood, N. J., $1.48 per net ton.

From Morristown, N. J., common brick, to Ellis Island, N. Y., when in lots of six cars, $1.16 per net ton.

From Newburgh, N. Y., brick, to Stroudsburg, Pa., $1.00 per net ton.

From New Paltz, N. Y., brick, to Berea, Clintondale, East Walden, Maybrook, St. Elmo and Poughkeepsie, N. Y., $1.05 per net ton.

From Niagara Falls and Suspension Bridge, N. Y., common, building and paving brick, to Batavia and Wilson, N. Y., 79c per net ton; to Burt, N. Y., 84c per net ton.

From Niagara Falls and Suspension Bridge, N. Y., common, building and paving brick, drain and hollow building tile, to La Salle and Sanborn, N. Y., 42c per net ton.

From Port Reading and Woodbridge, N. J., brick, to Franklin and McAfee, N. J., $1.68 per net ton; to Warwick, N. Y., $1.90 per net ton.

From Rockwood, Pa., brick, to Arlington and Baltimore, Md., $1.86 per net ton.

From Rosenhayn and Winslow Junction, N. J., brick and clay products, to Aubert, Beisels, Conyngham, Hazleton, West Hazleton and Wilkesbarre, Pa., $1.84 per net ton.

From Shoemakersville, Pa., brick, to Plainfield, N. J., $1.26 per net ton.

From Syracuse, N. Y., brick and articles taking the same rate, to Manchester, N. H., $2.62 per net ton.

From Syracuse, N. Y., face-brick, to Newark and Paterson, N. J., $1.74 per net ton.

From Trenton, N. J., common brick, to Hartford, Conn.,

and Rhinecliff, N. Y., $2.32 per net ton.

From West Winfield, Pa., sewer pipe, to Kensington, Md., 14.7c per cwt.

From Whippany, N. J., brick, to Scranton, Pa., $1.78 per net ton.

From Middle West Points

From Alsey, Ill., brick, to Evansville, Ind., $1.42 per net ton.

From Canton, Ill., brick, to La Crosse, Wis., $1.68 per net

From Canton, Ill., brick, to Avondale, Deering, Jefferson Park, Mayfair, Ravenswood, Rogers Park and Rose Hill, Ill., $1.26 per net ton.

From East Peoria, Ill., brick, to Peoria, Ill., 26c per net ton.

From Galesburg, Ill., brick, to Muscatine, Ia., 5.3c per cwt.

From Mapleton, Ill., clay, to Morton, Ill., 65c per net ton.

From Marietta, Ill.; clay, to Morton, Ill., $1.05 per net ton.

From Murphysboro, Ill., paving brick, to Salem, Ill., 84c per net ton.

From West Canton, Ill., brick, to Davenport, Ia., and Rock Island and Moline, Ill., $1.26 per net ton.

From Western Points

From Joplin, Mo., common and paving brick, to Helena, Ark., $1.50 per net ton.

From Keokuk, Ia., brick, to Hamilton, Ill., 42c per net ton.

From Southern Points

From Fort Runyon and Waterloo, Va., common or pressed-brick, to Brooklyn, N. Y., stations, $2.74 per net ton.

From Fort Runyon and Waterloo, Va., brick, to West Collingswood and Atlantic City, N. Y., $2.42 per net ton.

Date of Oregon Meeting Changed

The next meeting of the Oregon Clay Workers' Association, which has just recently been organized, will be held at Salem, Ore., March 30th and 31st. It was first announced that the meeting would be held on March 23 and 24, but it was later decided to set aside the last two days of the month for the gathering. The secretary of the new association, S. Geijsbeek, 604 Blake McFall Building, Portland, extends a most cordial invitation to the clayworkers of Oregon to attend the meeting, and especially those who have not as yet become members of the association.

S. A. F. E. Adopts Local Chapter Plan

In furtherance of its plan to extend its active operations through the medium of local chapters in the principal cities of the country, the Society Advocating Fire Elimination on March 4th organized its first local chapter in Cleveland, Ohio.

Ford Donley, of the Donley Brothers' Company, was the unanimous choice for president of the new local. I. C. Geist, of the Geist Cement Products Company, was made vice-president, and E. J. McGettigan, of the Barkwill Brick Company, placed in charge of the funds. R. P. Stoddard, the national secretary of the society, was made secretary also of the Cleveland chapter.

The following were chosen as trustees for two years: E. R. Seager, Lake Erie Builders' Supply Company; R. C. Mitchell, Farr Brick Company; B. J. Graham, Ohio Clay Products Company. The following were elected for the shorter term, one year: E. C. Suckow, Ohio Quarries Company and Virgil Marani, Marani & Moore, consulting engineers.

A Cincinnati chapter of the S-A-F-E will be formed in the near future.

Determine Today

To Install The

Underwood Producer Gas Burning System

Patented

It Means Your Burning Salvation

Investigate Others Who Are Using It

The Manufacturers Equipment Co.

Everything for the Clayworkers

Dayton, Ohio U. S. A.

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.
Scandinavia Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Scandinavia Belting Co.
Weller Mfg. Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Link-Belt Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mc. Mfg. Co., H.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Martin Brick Machine Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Sturtevant Co., E. F.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.

Clay Handling Machinery.
Clearfield Machine Shops.
Link-Belt Co.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Weller Mfg. Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
Chambers Bros. Co.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Colors.
Clinton Metallic Paint Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Link-Belt Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.
Scandinavia Belting Co.

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Machy. Mfg. Co.
Sackett Screen & Chute Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.

Dynamos and Generators.
Westinghouse Elec. & Mfg. Co.

Electric Shovels.
Link-Belt Co.
Marion Steam Shovel Co.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.

Elevator Buckets.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Gandy Belting Co.
Link Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Copping Bros.
Cutshall, J. M., & Carl.
Deavitt, H. M.
Frink Pyrometer Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Eq. Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
Arbuckle & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Schaffer Eng. & Eq. Co.

Fans.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filter Presses.
Baird Machine & Mfg. Co.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.

Fuel Economizers.
Sturtevant Co., B. F.

Gears.
Baird Machine & Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Schultz & Son, A. L.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Inspection Tests—Consultation.
Deavitt, H. M.

Interlocking Block.
Smith, W. W.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Eq. Co., The

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Gerlock, H. W.

Lime Mixer.
Gerlock, H. W.

Link Belting.
Link-Belt Co.

THE BUYERS' DIRECTORY—Continued

Locomotive Cranes.
Link-Belt Co.

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Metallic Paint.
Clinton Metallic Paint Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Westinghouse El. & Mfg. Co.

Oil Burners.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.

Power Plant Equipment (Complete).
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.
Schultz & Son, A. L.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Frink Pyrometer Co.
Stupakoff Laboratories.
Taylor Instrument Companies.

Quartz Glass Articles.
Englehard, Chas.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Frank, M. K.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Manufacturers Equipment Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Martin Brick Mach. Mfg. Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Link-Belt Co
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Shale Planer.
Arbuckle & Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.

Steam Shovels.
Ball Engine Co. (Erie Steam Shovels)
Marion-Osgood Co.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Steel Ties.
Cincinnati Frog & Switch Co.

Sprocket Wheels.
Link-Belt Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Weller Mfg. Co.

Switches and Frogs.
Cincinnati Frog & Switch Co.
Buckeye Rolling Mill Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Foster Co., L. B.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co
Standard Dry Kiln Co.
Taylor Instrument Companies.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Jackson & Church Co.
Chase Fdry. & Mfg. Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co., The.

Unloading Devices for Pans.
Clearfield Machine Shops.

Wagons.
Manufacturers Equipment Co.

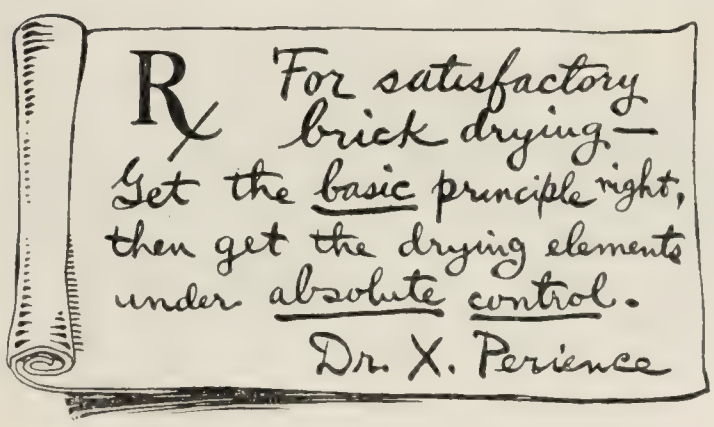
Wet Pans.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels.
Lehigh Car, Wheel & Axle Works.

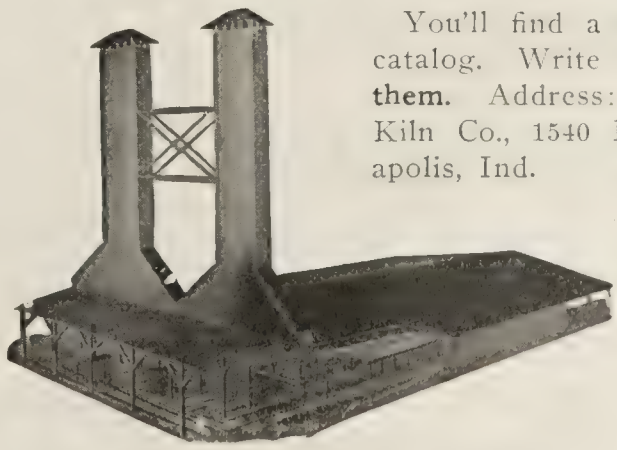
Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.



Over 25 Years of Success

proves that the basic principle of The Standard Natural Draft Steam Drier is correct. As to its perfect adaptability to suit **clays of all natures**, ask any Standard Drier user.



You'll find a list of users in our catalog. Write for it—then write to **them.** Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

WEBB WIRE WEARS WELL

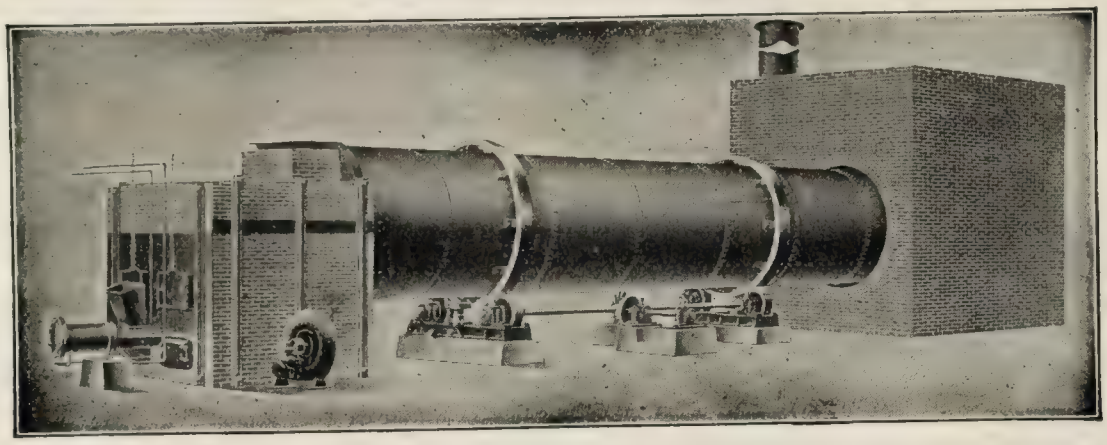
WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations $5.00 Post Free

THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

"BRICK AND CLAY RECORD"

445 Plymouth Court, Chicago

THE CHASE DRYER CARS

With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*

The Chase Fdry. & Mfg. Company

Columbus, Ohio





OSGOOD

"18" ¾-yd. Traction Revolving Shovel with independent steam steering engine, also combination hand steering operated from either side of shovel.

The Marion-Osgood Company

Marion, Ohio, U. S. A.

Eastern Office: 51 State Street, Albany, N Y.

Chicago Agency: The M-C-B Co., McCormick Bldg. Phone Har. 6365.

New York Agency: M. E. Davis, 1682, 50 Church St.

Philadelphia Agency: J. M. Reed Co., Inc., 516 Commercial Trust Bldg.

STEAM SHOVELS **DIPPER DREDGES**

Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

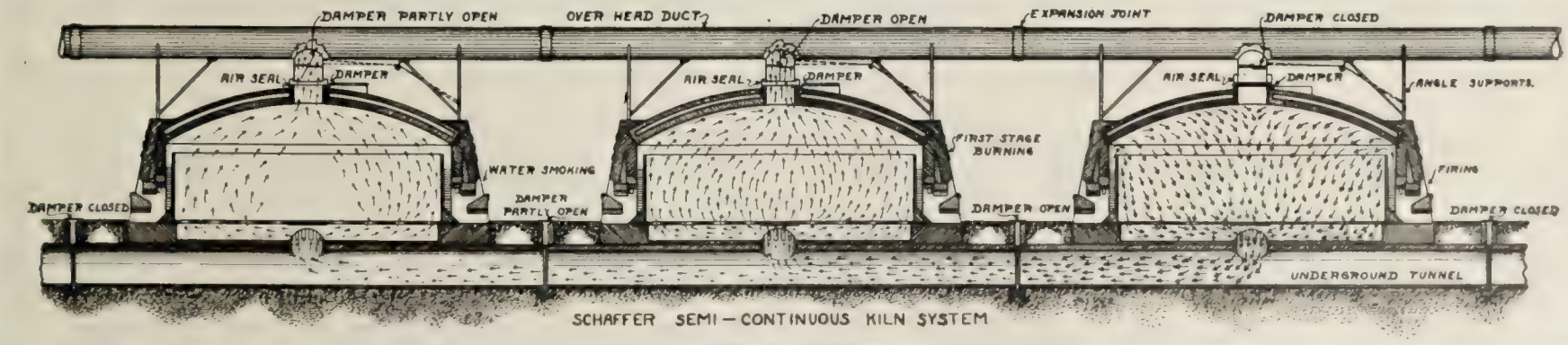
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



SCHAFFER SEMI—CONTINUOUS KILN SYSTEM

Patent Allowed



THE HOLLOW-TILE HOUSE

By FREDERICK SQUIRES

is a book every prospective home-builder should have. No amount of planning, however extensive, for that new home is complete without considering this new type of building material made from burned clay.

TABLE OF CONTENTS

INTRODUCTION

Chapter I.....Tile-Making
Chapter II.....Old World Stucco
Chapter III.....About Construction
Chapter IV.....Counting the Cost
Chapter V.....The History of the Use of Hollow-Tile for Houses
Chapter VI.....Architects' Tile Houses
Chapter VII.....Building the Other Man's House
Chapter VIII.....Floor Building, Sand Moulds, The T-Beam
Chapter IX.....Tile in Stucco Surfaces
Chapter X.....Tricks of the Trade
Chapter XI.....Tile and Concrete
Chapter XII.....Texture and Scale
Chapter XIII.....The Flat-Roofed House
Chapter XIV.....An Interesting Experiment
Chapter XV.....The House of Three Inventions

This book has 210 pages containing 215 illustrations and figures.

And even if you are living in a perfectly good house and don't intend to build for some time to come, GET THE BOOK ANYWAY, because you will find between its covers a story with just a touch of the romantic about it in the history of hollow tile and the hollow tile house with its European ancestry. It will make good reading for a quiet hour.

But don't treat this matter like the man to whom you have loaned five dollars, treats you. He's always putting you off. The longer you do without this book, the longer you remain in the darkness about a subject you should know all about. DON'T wait until tomorrow. Send in your order TODAY.

Price $2.50 Net

BRICK AND CLAY RECORD

CHICAGO

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head.	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin.	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Keim Brick & Tile Co.	Louisville	Ohio
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Federal Clay Products Co.	Mineral City	Ohio
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works.	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin.	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head.	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.
United States Roofing Tile Co... Parkersburg ..... W. Va.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Keller Brick Co., The, Cuyahoga Falls, O..... 13

BRICK (COMMON)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton Ill..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Metropolitan Paving Brick Co., Canton, O..... 10

BRICK (FACE)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
American Enamel Brick & Tile Co., New York, N.Y..... 13
Bradford Pressed Brick Co., Bradford, Pa..... 15
Gethmann Brick Co., Gladbrook, Ia..... 13
Hocking Valley Pro. Co., Columbus, O..... 13
Hydraulic Press Brick Co., St. Louis, Mo..... 13
Ironclay Brick Co., Columbus, O..... 12
Keim Brick & Tile Co., Louisville, O..... 15
Keller Brick Co., The, Cuyahoga Falls, O..... 13
Kimbell Brick Co., S. S., Chicago, Ill..... 13
McArthur Brick Co., McArthur, O..... 12
Stark Brick Co., Canton, O..... 12

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill..... 6
Brighton Fire Brick Co., New Brighton, Pa..... 6
Chicago Retort & Fire Brick Co., Chicago, Ill..... 4
Davis Fire Brick Co., Oak Hill, O..... 4
Dover Fire Brick Co., Cleveland, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6
Maurer & Son, H., New York City..... 4
Mexico Brick & Fire Clay Co., Mexico Mo..... 6
Queens Run Fire Brick Co., Lock Haven, Pa..... 4
Jos. Soisson Fire Brick Co., Eolivar, Pa..... 4
Southern Fire Brick & Clay Co., Chicago..... 6

BRICK OR BLOCK (PAVING)
Albion Shale Bk. Co., Albion, Ill..... 8
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Barr Clay Co., Streator, Ill..... 11
Bessemer Limestone Co., Youngstown, O..... 8
Big Four Clay Co., Canton, O..... 8
Carlyle Paving Brick Co., Portsmouth, O..... 10
Clinton Paving Bk. Co., Clinton, Ind..... 8
Danville Brick Co., Danville, Ill..... 10
Deckman-Duty Brick Co., Cleveland, O..... 8
Dunn Wire Cut Lug Brick Co., Conneaut, O..... 7
Hamburg Vit. Brick Co., Philadelphia, Pa..... 10
Harris Brick Co., Cincinnati, O..... 8
Hocking Valley Brick Co., Columbus O..... 10
Mayer Brick Co., C. P., Bridgeport, Pa..... 10
Metropolitan Paving Brick Co., Canton, O..... 10
Murphysboro Paving Brick Co., Murphysboro, Ill..... 11
Nelsonville Brick Co., Nelsonville, O..... 8
Purington Paving Brick Co., Galesburg, Ill..... 10
Shawmut Paving Brick Co., Shawmut Pa..... 10
Sterling Brick Co., Olean, N. Y..... 6
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 11
United Brick Co., Conneaut, O..... 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa..... 6

DEALERS
American Clay & Cement Corp., Rochester, N. Y..... 13
Bonner & Marshall Brick Co., Chicago, Ill..... 15
Kimbell Brick Co., S. S., Chicago, Ill..... 13
Globe Brick Co., East Liverpool, O..... 12

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O..... 10

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill..... 13

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa..... 6
Davis Fire Brick Co., Oak Hill, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Federal Clay Pro. Co., Mineral City, O..... 6

SALT GLAZED BRICK
Stark Brick Co., Canton, O..... 12

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

TILE (ROOFING)
National Roofing Tile Co., Lima, O..... 15
United States Roofing Tile Co., Parkersburg, W. Va..... 15

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, Connellsville, Pa. *Sales Office,* Bolivar, Pa.

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

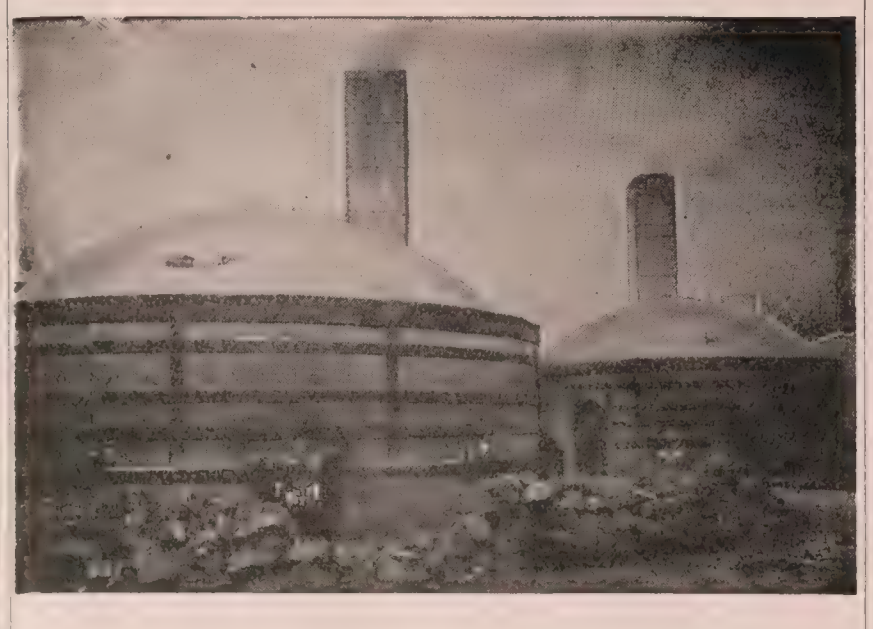
Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

***For* Side Walls**
***For* Crowns**
***For* Fire Arches**
***For* Perforated Bottoms**

Consult us when in market.
We are ready to serve you

DAVIS FIRE BRICK CO.

OAK HILL, OHIO

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

This list is complete, so far as "Brick & Clay Record" can make it. New trade names will be added as fast as they are adopted and notification sent this office. If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press Bk. Co., St. Louis, Mo.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everhard—Everhard Co., Massillon, O.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraff—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Saraband—Hydraulic-Press Bk. Co., St. Louis, Mo.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

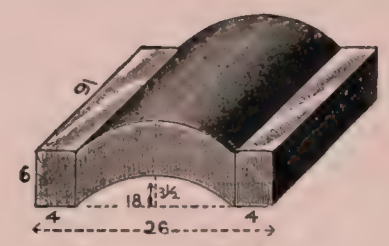
High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

FIRE CLAY SHAPES

Fire Brick For Kiln Construction



Champion Kiln Arch
One Piece

Shapes of all Kinds

The Federal Clay Product Co., Mineral City, O.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.



Brick Houses

And How to Build Them

A book containing 219 (8x11 inch) pages illustrated by over 300 designs and details of brick house construction, beside perspective views and floor plans of 82 brick houses with estimates of cost construction and miscellaneous data about the use of brick from its manufacture to its placing in the building, including ornamental brick and tile work, sewer construction, fireplaces, brick veneer construction, arches, cements and mortars, how to estimate the cost of brick construction, etc., etc.

The houses shown are all of artistic design drawn by leading architects and show what can be accomplished by the use of brick as a building material.

Price, Postpaid $1.00

Book Department *Brick and Clay Record* Chicago

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

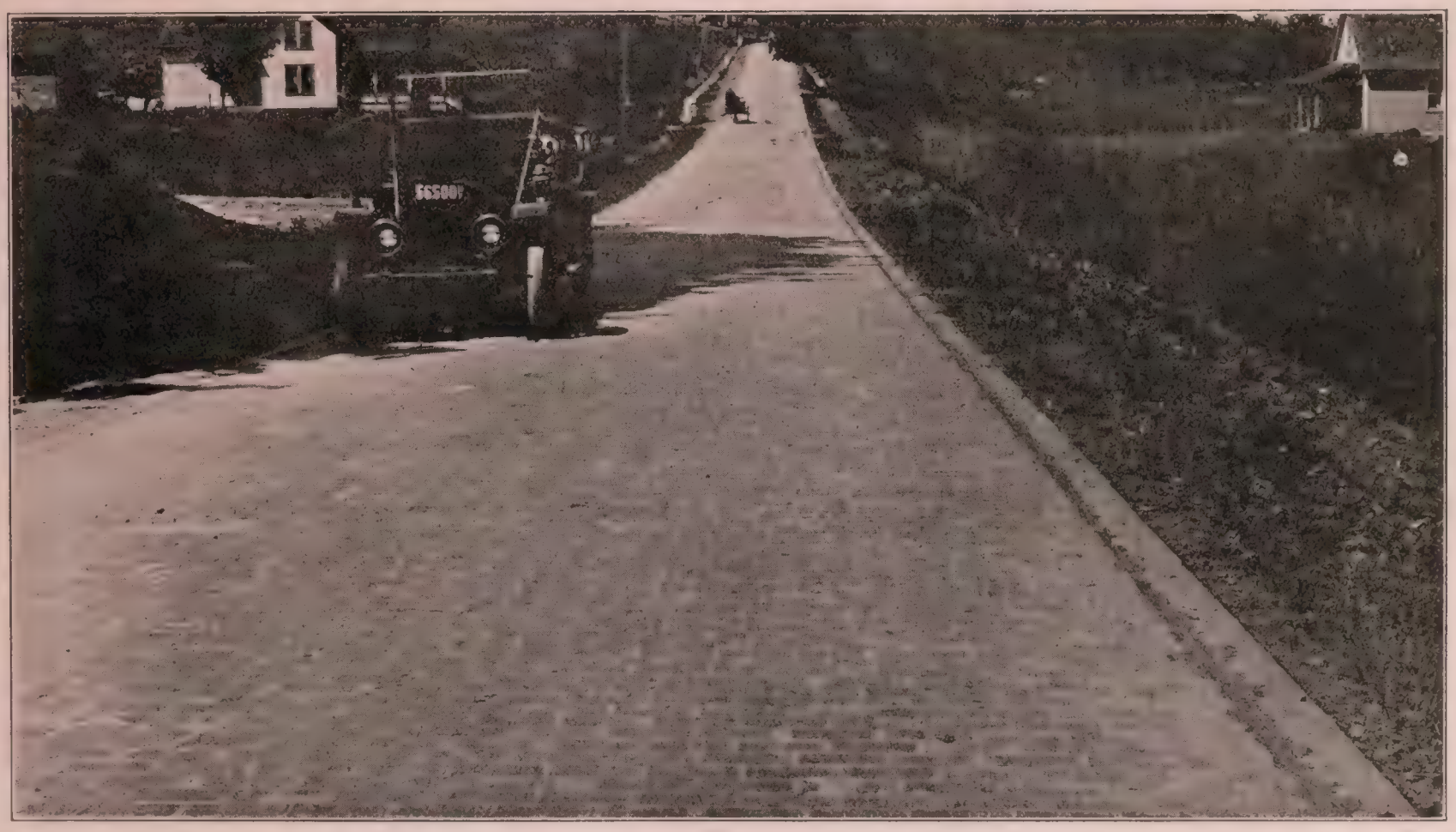
OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

The Permanent Way



Permanent if Properly Cared For.
Durable Under any Conditions.
Brick in Pavements is the Most Durable of all Manufactured Materials.
Wire-Cut-Lug Brick is the Most Durable Type of Paving Brick.
Manufactured by 26 Competing Companies operating 42 Plants.

Write to

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

(*Licensors*)

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory:
Zanesville, Ohio

Office:
St. Paul Bldg.
Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

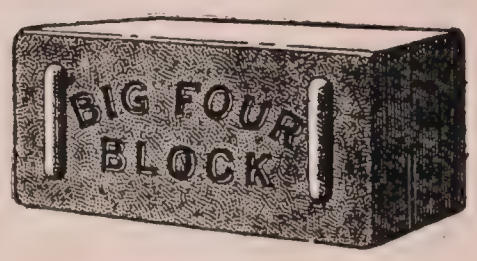
CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

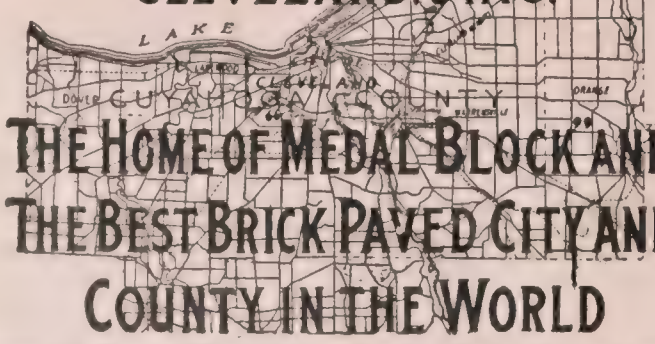
A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO

CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

Columbus, Ohio, Office—The Ruggery

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick

Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick

Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick

Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost — see Prices Quoted in this Advertisement.

Build with Brick

Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio



The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

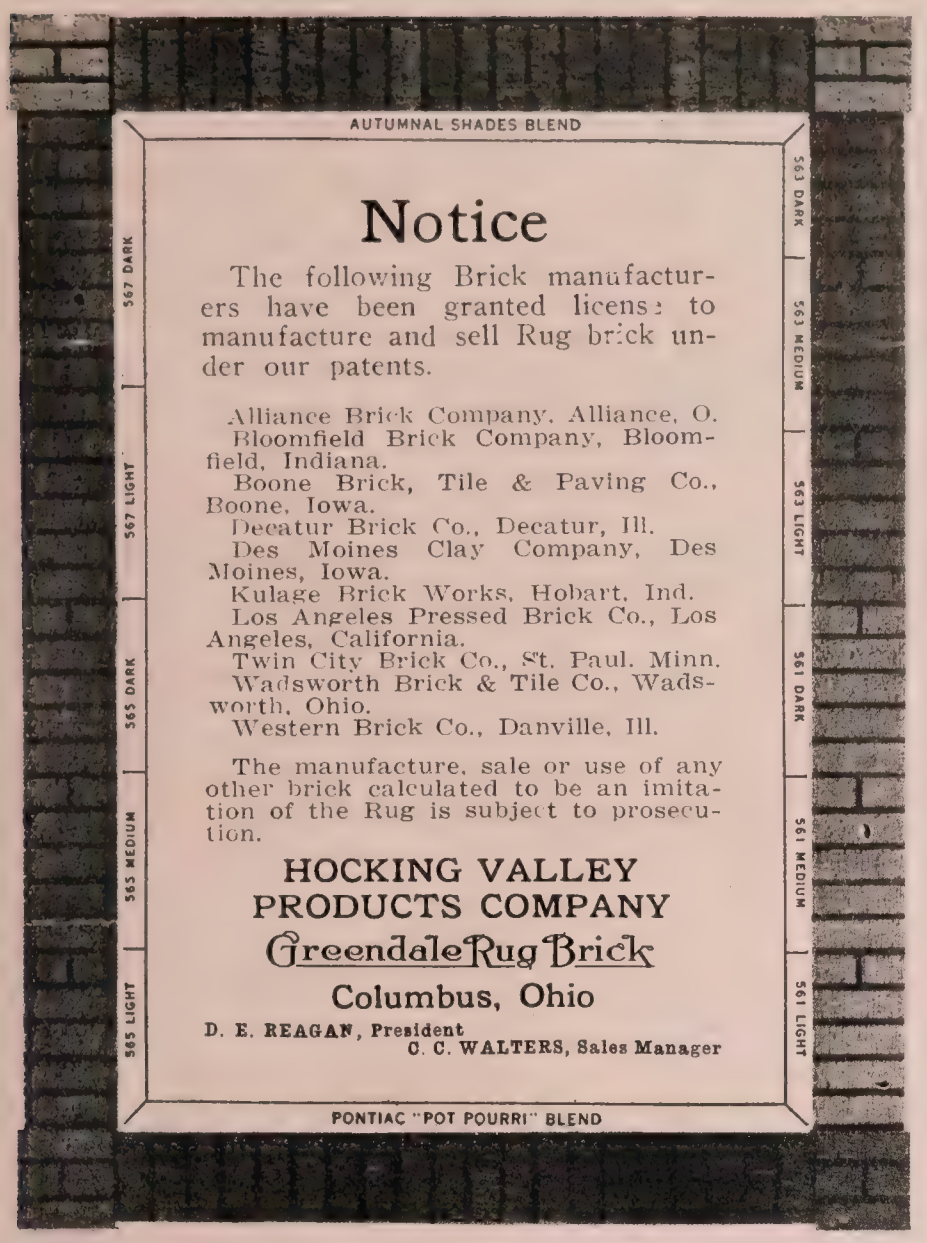
Build with Brick
BELDEN BRICK CO.,-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

For sale by

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO



Notice

The following Brick manufacturers have been granted licenses to manufacture and sell Rug brick under our patents.

Alliance Brick Company, Alliance, O.
Bloomfield Brick Company, Bloomfield, Indiana.
Boone Brick, Tile & Paving Co., Boone, Iowa.
Decatur Brick Co., Decatur, Ill.
Des Moines Clay Company, Des Moines, Iowa.
Kulage Brick Works, Hobart, Ind.
Los Angeles Pressed Brick Co., Los Angeles, California.
Twin City Brick Co., St. Paul, Minn.
Wadsworth Brick & Tile Co., Wadsworth, Ohio.
Western Brick Co., Danville, Ill.

The manufacture, sale or use of any other brick calculated to be an imitation of the Rug is subject to prosecution.

HOCKING VALLEY PRODUCTS COMPANY
Greendale Rug Brick
Columbus, Ohio
D. E. REAGAN, President
C. C. WALTERS, Sales Manager

Hy-tex
The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

"AMERICAN"
ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.
Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

L. D. BINYON, President
H. L. MATZ, Vice-President
JAS. A. HOGAN, Sec'y and Treas.

S S. Kimbell Brick Co.
Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce
Branch Exhibit and Sales Room:
738 South Michigan Boulevard
CHICAGO

American Clay & Cement Corporation
ROCHESTER, N.Y.
Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

Official Directory of
Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

American Ceramic Society—Richard R. Rice, E. M., Pres., Beaver, Pa.; Edward Orton, Jr., Sec'y, Columbus, Ohio.

American Face Brick Association—Harold W. Holmes, Pres., Detroit, Mich.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—J. Edward Frid, Pres., Hamilton, Ont.; Gordon C. Keith, Toronto, Ont.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Detroit Brick Mfrs. & Dealers' Ass'n—W. B. Wreford, Mgr., 2016 Dime Bank Bldg., Detroit, Mich.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; Charles T. Harris, Sec., Cleveland, Ohio.

Illinois Clay Manufacturers' Association—J. L. Buckley, Pres., Aledo, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—C. P. Mayer, Pres., Bridgeville, Pa.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New England Builders' Supply Association—Charles M. Kelly, Pres., Providence, R. I.; F. H. Kingsley, Sec'y, Fall River, Mass.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—T. B. Martin, Pres., Minneapolis, Minn.; L. G. Rose, Sec'y-Treas., Minneapolis, Minn.

Oregon Clay Products Association—W. E. Wilson, Pres., Salem, Ore.; S. Geijsbeek, Sec'y, Portland, Ore.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—P. C. G. Gosser, Pres., Coshocton, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, O.

Western Ontario Clayworkers' Association—Walter Clark, Pres., Corunna, Ont.; Alfred Wehlann, Sec'y., Rodney, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—A. W. Hilker, Racine, Wis.; Prof. Samuel Weidman, Vice-Pres. and Sec'y, Madison, Wis.

THE KEIM BRICK & TILE CO.

Makers of

"KEIM BRICK"

Rough Texture, in Beautiful Scale of Color

Offices: ***Louisville, O.***

Factory: ***Mapleton, O.***

Agencies solicited in all new territory.
Prices and samples cheerfully furnished.

The United States Roofing Tile Co.

ROOFING TILES

Promenade and Floor Tiles

Pure SHALE products of superior quality and patterns.

Two Factories – Prompt Deliveries

GENERAL OFFICE
PARKERSBURG - WEST VIRGINIA

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

POSTERETTES



The best, brightest, most attractive poster stamp that has so far been issued.

It carries the "Build with Brick" slogan everywhere your mail or express packages meet the eye of a prospective builder.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(***Exclusive distributors of the famous Oriental Brick***)

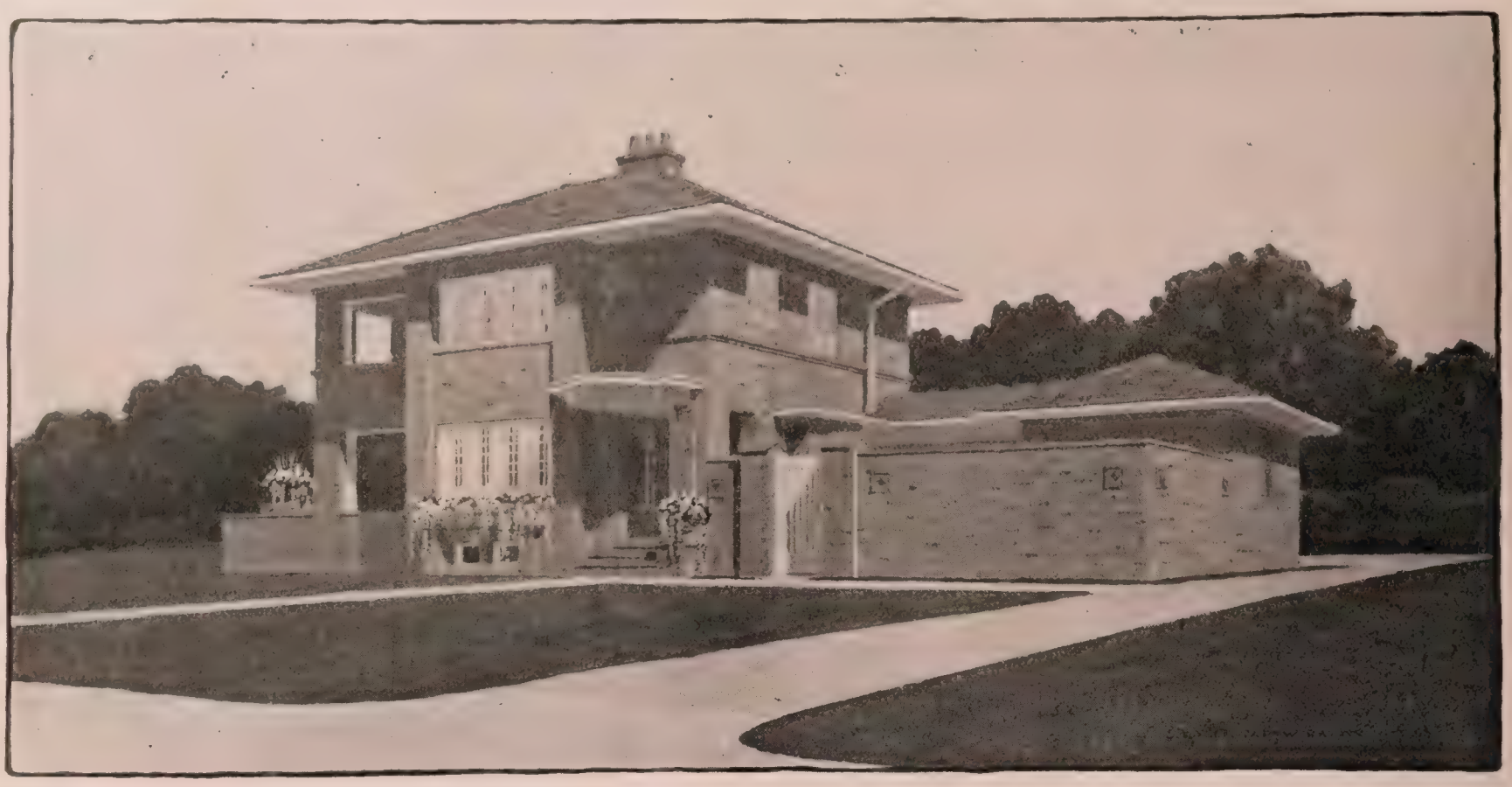
Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.



An Attractive Booklet

Telling about the house pictured above has been mailed to three thousand brick men

¶ If you have not received a copy, or if you have mislaid the one that was sent to your office, please write for another.

¶ It tells the reason why a few men, interested in increasing the market for brick, subscribed sufficient money to secure plans and build a low-cost, fire-resistant residence on the grounds of the Panama-Pacific International Exposition at San Francisco.

¶ It tells why the Exposition site was selected for a demonstration of the superiority of brick residence construction, and

¶ How it is proposed to give Nation-wide publicity to this house, as typifying the beauty and economy of brick.

¶ On another page of this issue of "Brick and Clay Record" is shown a photograph, taken March 4, 1915, showing the house well under roof.

¶ The work has been carried to this point by a very small group of men. The good that their work will do the industry depends upon how generously the industry supports this publicity project.

You have, in this, an opportunity of putting your money into a common fund with other brickmakers, to demonstrate the low cost of permanent, fire-resistant residence construction.

Write, and make your checks payable to Charles Bonner, Treasurer, 1205 Chamber of Commerce, Chicago

Panama - Pacific Clay Products Association

HERMAN L. MATZ, *President* CHARLES BONNER, *Treasurer*

WILLIAM P. VARNEY, *Vice-President*

It Costs Absolutely Nothing to Heat

The NATIONAL Exhaust Steam DRIER

during the daytime. It's the most economical system for any brick maker to use.



No
— fans
— pulleys
— belts
— shafting
— conveyors

The NATIONAL is a steam-heat drier, using exhaust steam during the day and live steam at night. Thus the cost of heating in daytime is nothing, while at night all you need is a fireman who can read a steam gauge. NO OTHER ATTENTION REQUIRED. And when live steam is used the condensation is put back into the boiler at boiling point. Isn't that economy?

Write us—let us help you solve your drier problems.

The National Dry Kiln Co., 1118 East Maryland St., Indianapolis, Ind.

SAMSON INTERLOCKING TILE

PATENTED

The modern building material, the only Tile block building any desired thickness of walls and producing smooth or scored faces.

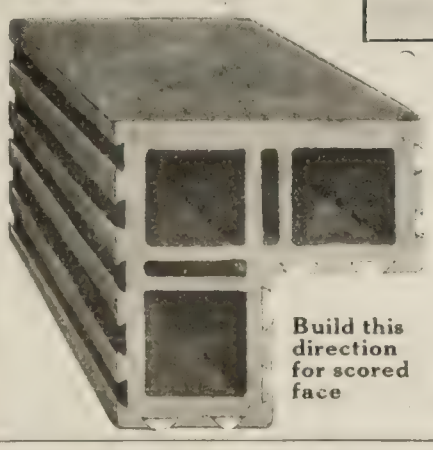
The one size of block builds 6-in., 9-in., 12-in., 15-in., 18-in. walls.



The building material the architects and builders have been looking for.

The public are realizing the advantages of hollow wall construction, and shall demand the best.

Be progressive and join the great army of Samson Tile Manufacturers



Build this direction for scored face

Are you having some of those pleasant dreams of the great sky scrapers, factories and palatial homes, that are going to be built from SAMSON Tile? These dreams shall all come true, and swell your bank account.

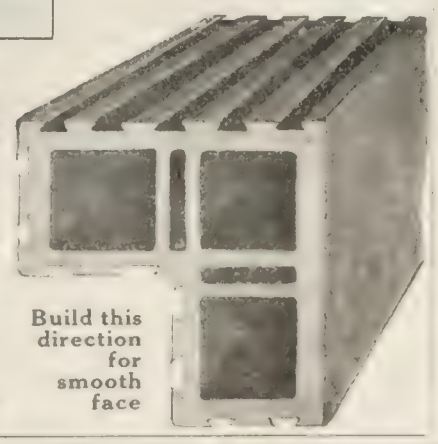
SAMSON Tile may be made with one rough face, which would build a rough face texture tile wall, and also be suitable for a stucco facing.

Never before has the genius of man given to the architect and builder such a variation of possibilities in a building material.

Licenses granted to only responsible clay products manufacturers.

W. W. SMITH

Shallow Lake, Ontario, Canada



Build this direction for smooth face

Here Is The Point

The advent of the simplified type known as the LAWSON TRAMWAY puts the whole subject of Short-Haul Transportation on a new basis. The Aerial Tramway has hitherto been strictly an emergency apparatus, to be resorted to when all other reasonable means of transportation fail. The standard or narrow gauge road, traction engines, motor trucks, etc., were first figured on as the preferred plan. But if on account of severe grades, sharp curves, deep canons, river crossings, etc., none of these were feasible, then, as a last resort, the Aerial Tramway was called in;—and performed its service well, as a rule. Nevertheless, its high initial cost, its endless and heavy upkeep, and its lack of general flexibility to adapt itself to the best route have always stood in the way of its broader application.



WHAT WE DO IT WITH

Now comes the Lawson Tramway into court. It is no longer "aerial" at all except in the most limited sense of the term. It sticks close to earth at a general height of 10 feet to the top rail except in crossing local depressions. Curves present no obstacles. Its cost delivered and erected is far lower than any other tramway. It is built in short sections and hence can be extended or shifted in location at will. *Above all, its cost of maintenance is a mere fraction of that of any other tramway.* In short it is as sensible and simple as a cart,—which in fact, it is substantially.

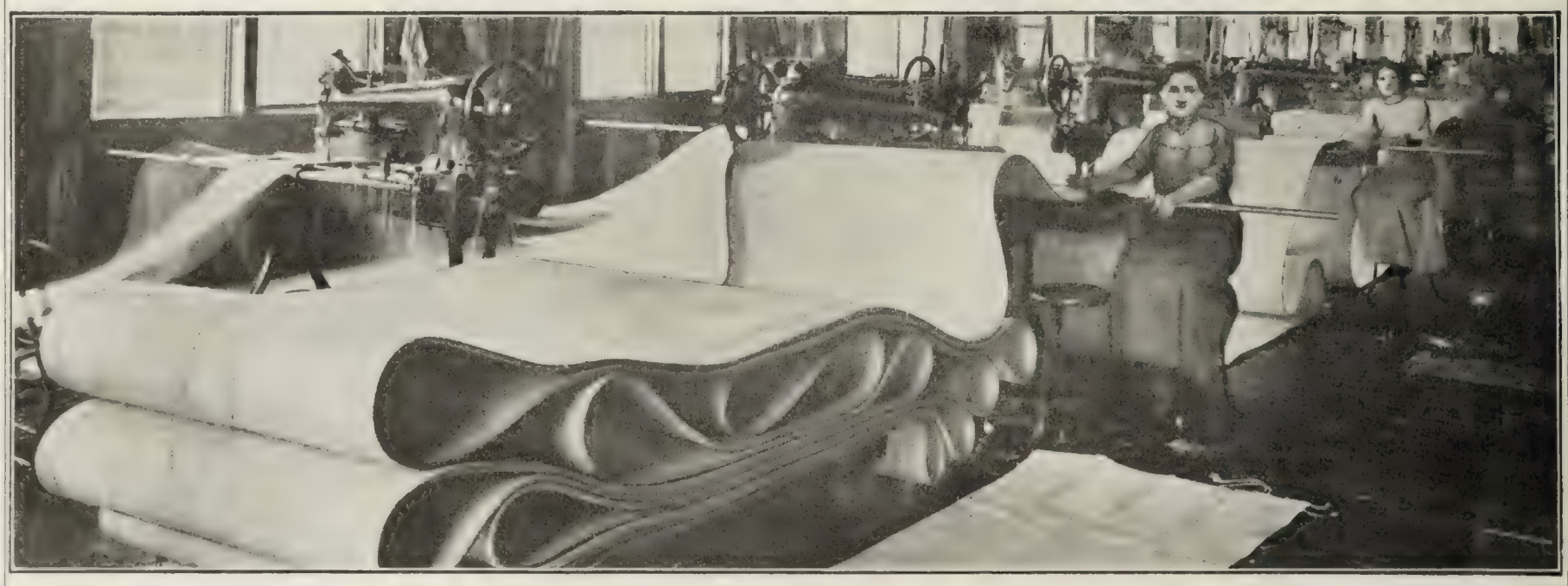
It is our purpose to press home these facts until they are thoroughly understood. The Lawson Tramway will then be not the *last* but the *first* resort as the solution of the Short-Haul Problem. Where railroad service ends, the Lawson service begins. It even replaces the mule.

The various engineering problems presented are of the most stimulating character. In application no two tramways are alike. Our clients may be assured that Lawson Tramways are not "built by the mile and sawed off to order," but each case receives the closest engineering study, with the interest of our client always paramount to every other consideration.

Very respectfully,

AMBURSEN COMPANY, Tramway Department **61 Broadway, NEW YORK**

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.

CUT GEARS

INVESTIGATE Nuttall Cut Gears for your Clay Working Machinery.

Order Nuttall Cut Gears when overhauling, and reduce your gear troubles to a minimum.

Address Dept. B.

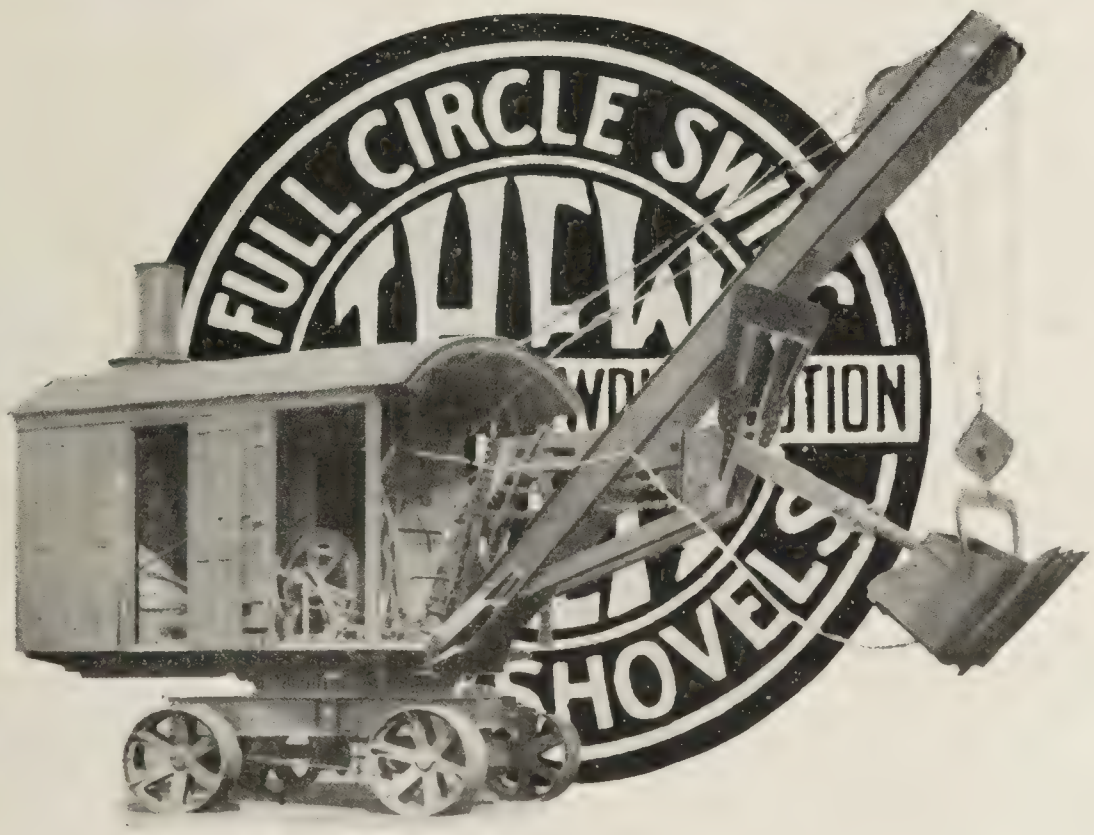
Nuttall

Pittsburgh

Made in U. S. A.

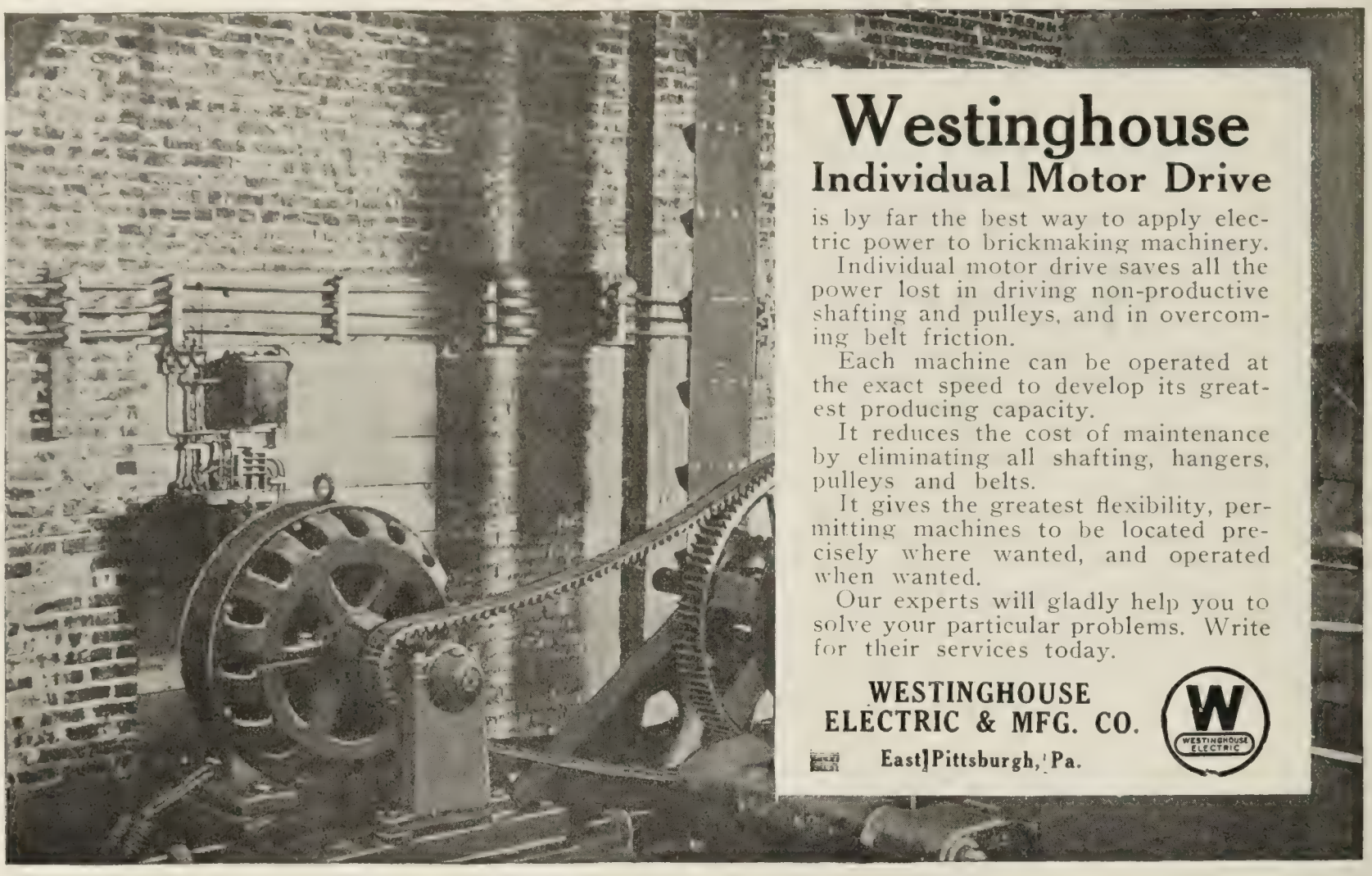
The Crowding Motion And The Full Circle Swing

Are Distinctive Features of **Thew Automatic Shovels** Enabling them to handle either shallow or deep cuts successfully and economically and furnishing a prying motion that is particularly effective in shales and fireclay.



Are Cost-Saving Features That Make **Thew Automatic Shovels** The standard for brick yards. **300 Brick Manufacturers** are now using Thew Shovels and will gladly tell you what they are saving with their Thews. Write for Catalogue A and list of Thew Owners near you.

The Thew Automatic Shovel Co., Lorain, Ohio



Westinghouse
Individual Motor Drive

is by far the best way to apply electric power to brickmaking machinery.

Individual motor drive saves all the power lost in driving non-productive shafting and pulleys, and in overcoming belt friction.

Each machine can be operated at the exact speed to develop its greatest producing capacity.

It reduces the cost of maintenance by eliminating all shafting, hangers, pulleys and belts.

It gives the greatest flexibility, permitting machines to be located precisely where wanted, and operated when wanted.

Our experts will gladly help you to solve your particular problems. Write for their services today.

WESTINGHOUSE ELECTRIC & MFG. CO.

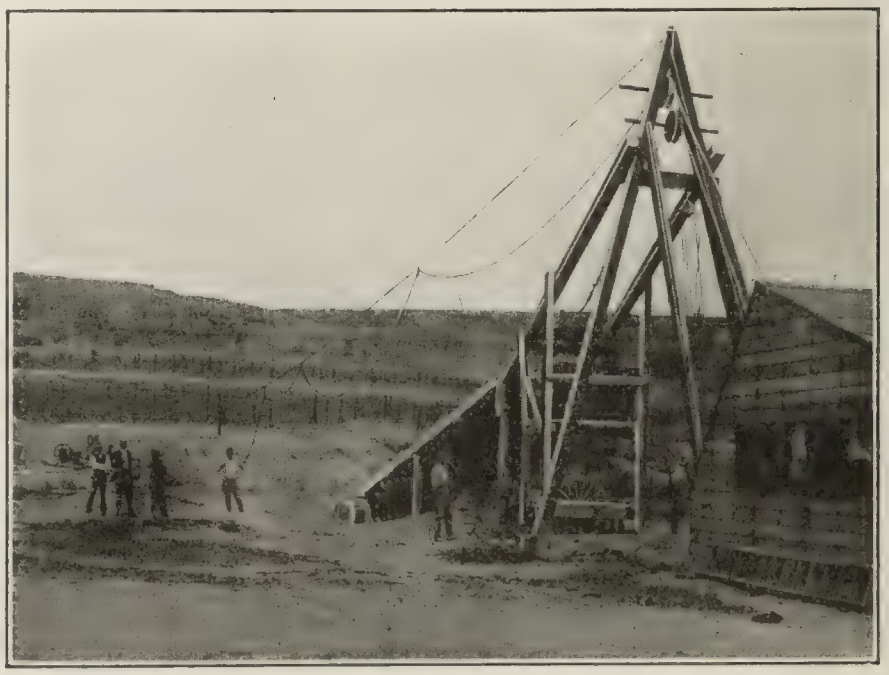
East Pittsburgh, Pa.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia

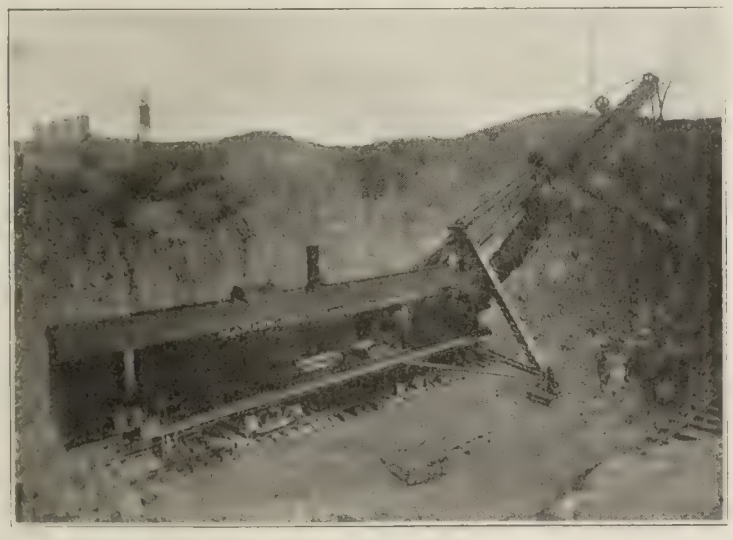
In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

You Must Tear Down this Wall!

On this Side
20%

of the money spent for residence construction in the United States and Canada, and this small bit is being fought for and divided among all the interests making and selling fire resistive building materials, including:

STONE
BRICK
TILE
CEMENT
GYPSUM
METAL
ASBESTOS

and all the other fire-safe and dependable goods—with the best fighters getting the biggest share.

THE WALL OF MISREPRESENTATION

On this Side
80%

of the money spent for residence construction in the United States and Canada, and this large share going, undivided and uncontested to

Lumber!

This wall may appear formidable, but it is like the construction that prospers because this wall exists—very flimsy. It is built up of misinformation and the wasteful habit of building to burn. Train the rapid-fire guns of truth upon it and the wall will crumble.

The Society Advocating Fire Elimination is recruiting an army for the attack. We are telling the prospective builder, through newspaper publicity and direct advertising, the truth about the SAFETY, ECONOMY, COMFORT and BEAUTY of FIRE-SAFE CONSTRUCTION.

Let us tell you how to start this movement in your own city through local organization.

Society Advocating Fire Elimination
THE S-A-F-E
Leader-News Building, Cleveland, Ohio

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—POSITIONS.

WANTED—Position as superintendent or foreman in plant manufacturing face, paving or hollow ware, by a thoroughly practical man and machinist, who fully understands brick machinery and burning, also the handling of labor to get results. Capable of installing new up-to-date plants. Strictly temperate; can furnish A-1 references. Address: 3-D, care of "Brick and Clay Record." 3-TF.

WANTED—Position as superintendent or manager of clay plant. Have 20 years' experience in manufacturing and marketing paving brick, pressed brick and hollow ware. Can design and erect complete plants. A1 references. Address: 3-BN, care of "Brick and Clay Record". 3-2-1P.

WANTED—Position as superintendent of brick or tile plant, any process; or will contract to make and burn brick by thousand; or will lease brick or tile plant. Twenty-two years' experience; best references. Address: 3-BC, care of "Brick and Clay Record." 3-2-1P.

WANTED—Position as superintendent of clay drain tile or brick plant by practical man who can produce results. Twenty-five years' experience. Address: A. O. Martin, Lynn, Ind. **3-2-3P.**

WANTED—Position as superintendent of brick plant. Experienced in all leading clay lines. Employed, but desire change. Best references. 3-BA, care of "Brick and Clay Record." 3-2-1P.

SPECIAL OPENINGS.

WANTED—Correspondence with experienced brick manufacturer who would be willing to locate in a prosperous city where no other brick plant is in operation. Address: The Greater Clarinda Club, Clarinda, Iowa. 3-2-1.

WANTED

WANTED—To hear from owner of good brick or tile plant. Send price and particulars. D. F. Bush, Minneapolis, Minn. 3-2-1P.

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—The Fairfield Brick & Tile Factory. Cost $37,000 complete, and suspended on account of lack of management. Only run short time and can be bought cheap and on easy terms. 7.51 acres—558 ft. C. R. I. & P. railway trackage. Building 3 stories, 50x120 ft. Boiler room 32x50 ft; dirt room, 32x50 ft.; drying room 40x100 ft.; office 16x24 ft. 150 three-deck dryer cars; cement house, 32x50 ft. Three 24-ft. down-draft kilns. 55 ft. stack. One 30 ft. down-draft kiln, 60 ft. stack; boiler stack, 60 ft. 125 h. p. Corliss engine; 85 h. p. boiler. J. D. Fate brick and tile machinery. 25,000 ft. steam drying pipes. 200 electric light dynamo. Reservoir—15 ft. deep. City water. E. R. Smith, Trustee. Fairfield, Trustee. 3-2-1P.

FOR SALE—Whole or half interest, Raymond stiff-mud 20,000 capacity brick plant, located in growing town, three railroads. Shale supply unlimited, making fine red builders, face and pavers. Good local and shipping market. Owners not brick men and in other business. Bargain for right man. Address: Daniel Troy, 245 So. 4th St., Raton, N. M. 2-2P

FOR SALE—Brick plant, saw mill, lath and shingle mill, also lumber yard. At your own price. Everything in good running order. If you wish to buy write Peter Larson & Sons, Barronette, Wis. 3-2P.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Sand-mold brick plant with 58 acres clay land. Located near Minneapolis, Minn. All newly rebuilt. Address: Mrs. W. C. Fike, 602 East 25th St., Minneapolis, Minn. 3-2-1P.

FOR SALE—Sand-mold yard, capacity 50,000 brick per day. Yard located 10 miles from Duluth Steel Plant. Reason for selling: owner died last July. For further information address: Mrs. Alice Hart, Wrenshall, Minn. 3-2-1P.

FOR SALE—Soft-mud plant, 30,000 capacity. Only plant in city of 25,000. Address: Bromilaw Brick Co., Alexandria, Va. 3-2-3.

FOR SALE—A tile mill with saw mill and cider press in connection. Either as a whole, or any part of machinery wanted. A rare bargain. Tile Mill Co., Hamilton, Ind. 3-2-1P.

FOR SALE—Land and improvements and machinery of the Loogootee Glass Sand Co., at Loogootee, Ind. For particulars address: Loogeetee Glass Sand Co., Louisville, Ky. 2-2-2P.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR LEASE—FIRE CLAY LAND.

FOR LEASE—We offer a large amount of Kittanning fire clay for lease on royalty basis. Railroad is built through the property. For further information inquire of H. A. Colwell, Kittanning, Pa. 3-2-3P.

FOR SALE—SECOND-HAND MACHINERY.

REVOLVING STEAM SHOVELS
For Sale

Thew No. 1, with 1¼ yd. dipper.
Thew No. 0, with ⅝ yd. dipper.
Bucyrus 18-B, with ⅞ yd. dipper.
Bucyrus 14-B, with ⅝ yd. dipper.
All on traction wheels and in first-class working order.

Wm. B. Grimshaw Co.,
690 Drexel Blvd. Philadelphia, Pa.
3-2-3P.

FOR SALE—Largest size "D" Martin machine, new, used less than one month. One Fate crusher, new, smooth roll. One 40 h.p. firebox boiler in first-class condition. Box 15, Clio, Mich. 3-2P.

BARGAIN LIST OF SECOND HAND MACHINERY.

Repaired and Ready for Shipment.

1—150 H. P. Non-Condensing Steam Engine.
2—6 H. P. Upright A B Fan Engines.
15—12 to 15 H. P. Various makes, slide valve steam engines.
10—15 to 35 H. P. Various makes, Gas Engines.
1—54" x 16' Atlas Boiler.
2—36 x 15 A B Ventilating Fans.
1—24 x 12 Pressure Blower.
1—No. 7 Sturtevant Blower.
2—C & A Potts Soft-Mud Brick Machine.
1—Ross-Keller 4 Mould Dry Press Brick Machine.
1—Penfield 6 Mould Dry Press Brick Machine.
1—Raymond Automatic Cutter.
1—Hummer Jr. Fate Brick and Tile Machine, with full set of building block dies.
1—100 M Arbuckle Horizontal Pug Mill.
1—100 M Michigan Horizontal Pug Mill.
2—Second hand Rust Clay Feeders.
1—20 M Kells Brick Machine and cutter.
2—25 M Disintegrators.
1—Bechtels Automatic Side Cutter.

New Machinery at Special Prices.

1—100 M Stiff-Mud Brick Machine.
1— 30 M Stiff-Mud Brick Machine.
1— 20 M Stiff-Mud Brick Machine.
3—25 M Disintegrators.
1— 50 M Disintegrator.
1—100 M Disintegrator.
400—New Brick & Tile Barrows.
10—New Spring Trucks, Complete.
2—Bechtels Automatic End Brick Cutters.
4—Iron Frame Winding Drums.
4—Wood Frame Winding Drums.
3—10' Clay Elevators.

Above machinery offered subject to prior sale at reduced prices.

MARION MACHINE FOUNDRY & SUPPLY CO.
P. O. Box 395. Marion, Indiana.

A FEW OF OUR BARGAINS in first-class, slightly used clayworking machinery:

10 steam engines, all sizes from 5 h.p. vertical to 450 h.p. Corliss.
6 H. T. boilers, 40 to 150 h.p.
12 motors, different makes, from 1 to 125 h.p.
8 steam pumps, 1½ in. to 6 in. discharge.
6 boiler feed pumps.
1 Brewer machine, with dies and cutting table (made only one kiln of tile).
1 9-ft. Frost dry pan, used only 30 days.
1 Ross-Keller 6-mold dry press and disintegrator, excellent condition.
1 Fate smooth roll crusher.
1 Revolving dryer and automatic stoker, 66 in. by 32 ft.
1 American 12 ft. pugmill and one 9 ft. Freese.
2 Dry pans—9 ft. Frost, good as new, and 8 ft. Frost.
1 Freese A Special brick machine with rotary side cutter.
1 Fernholtz clay plow and clay gatherer.

Large stock of pulleys, shafting, belting, pipe, valves and fittings of all kinds.

Let us know what you need; we can save you money. Address: Box 494, Clayworkers' Exchange, Springfield, Ill. 3-TF.

HOW TO ANALYZE CLAY

A practical work for practical people. A Text Book for Clay Analysis, by Holden M. Ashby, Prof. of Organic Chemistry, Harvard Medical College, and Instructor Chicago Night School of Chemistry. An Aid to Beginners and full instructions for making clay analyses. 64 pages, with illustrations. Postpaid to any address in the world, $1.00

Brick and Clay Record, 445 Plymouth Court, Chicago

Brick and Clay Record Classified Ads Are Result Producers

FOR SALE—One Andrus 4-mold dry press machine that has made only 400,000 brick—practically new. $1,200.00 on car, Memphis. One 5-mold (can be changed to six) Hercules soft-mud machine. One 6-mold Hercules soft-mud machine. Overhauled and in good condition. $250 each on cars, Memphis. One No. 0 late model Thew steam shovel that has been worked about six months and in good condition; $2,300.00 on cars, Memphis. Address: South Memphis Brick Co., Memphis, Tenn. 3-2-TF.

FOR SALE—Practically new, one 40 h.p. and one 60 h.p. high pressure boiler, 100 h.p. slide valve engine, 9 ft. American dry pan, automatic feeder, clay elevator, 8 ft. pugmill, No. 88 Brewer brick and tile machine, Fayets end cutting table, Brewer tile cutting table (10 and 12 inch), board delivery side cutting table, 6-track Standard steam dryer, 102 cars, centrifugal pump with gasoline engine attached, Pulsometer steam pump. W. E. Lyon & Co., Carthage, Ill.

FOR SALE—Bensing automatic side-cut brick table complete with off-bearing table. Used for cutting but one kiln of brick. A bargain. One New Era gas engine, 40 h. p., good as new. One 10A Brewer mill, good as new. Brewer 10 ft. pugmill in first-class condition. Milroy Drain Tile Co., Milroy, Ind. 3-2-1.

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

FOR SALE—Large size Freese cutting table complete. Small air compressor of the Ingersoll-Rand make, and McGowan cold water pump. Address: P. O. Box 804, Portsmouth, Ohio. 3-2-2

FOR SALE—Complete drain tile manufacturing equipment, including machinery, boilers, etc. For particulars write: Thompson Brothers, Rolfe, Ia. 8-2TF

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Ross Keller 6-mold dry press and disintegrator. Nearly new. Can be bought for one-fourth original cost. The Shorey-Willis Brick & Supply Co., Cincinnati, O. 3-2-TF.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.

Second-hand rails cut to any lengths desired for all purposes.

Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,

PARK BLDG. PITTSBURGH, PA.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C

Can
You
Use
Used
Machinery

If so, keep your eye on the Classified Department. It offers you constant opportunities of cheaply purchasing used machinery and equipment.

Brick and Clay Record

Gold In Exchange for Old Iron.

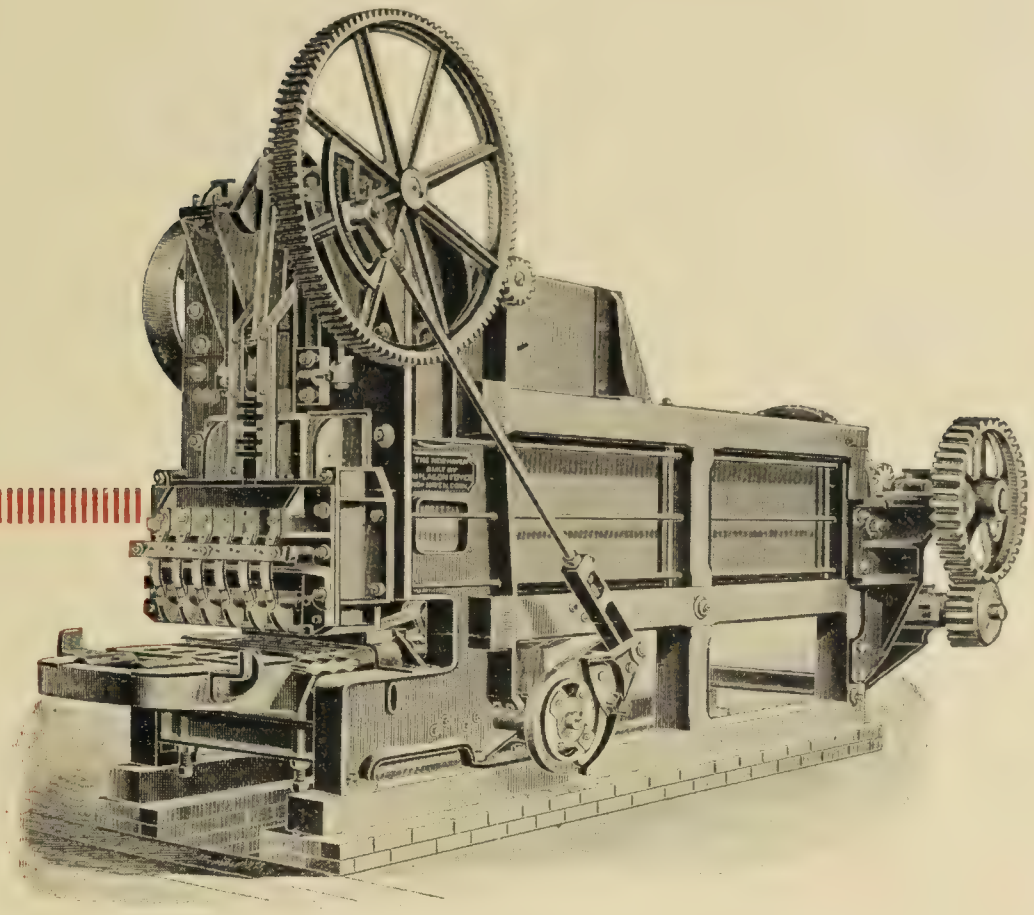
NO, we are not going into the junk business. We are going to get a buyer for those machines you have standing around in the way, rusting and getting out of date. A properly worded "AD" sent to us on or before the 10th or 25th of each month will surprise you by the quick returns you get.

If you want to sell, buy or exchange an engine, pump, pug-mill, dry pan, die, repress, clay lands or factory—if you want an expert burner, fireman or engineer—if you want a position, we will tell thousands of people just exactly what you want and it will cost you but 8 cents per word.

Look over the Classified Section in this issue. Note the varied opportunities. Your particular requirements may not be fulfilled. If not, write a short spicy "AD" and send it to us in time for next issue.

BRICK AND CLAY RECORD

445 Plymouth Court, CHICAGO, ILL.



THE ONLY thing that gives value to any machine is its earning capacity.

That the earning capacity of brickmaking machinery depends upon strength and good construction quite as much as upon rated speed, is clearly evident. Many brickmakers have learned this in the expensive school of experience.

When a machine is idle, awaiting repairs, its earning capacity is stopped. The breakdown affects its average earnings for the entire year.

Continuous results determine earning value. It is on this principle that

New Haven Soft Mud Brick Machines

are built. That is what has made them the greatest profit winners for the brickmaker.

Write us, that we may send you literature on this and kindred subjects.

THE EASTERN MACHINERY COMPANY

NEW HAVEN, CONN.

Builders of the Strongest Soft-Clay Brick Machine in the World

"Father," said a young man one day, "I am worried. So many manufacturers are copying our designs."
To which father answered with a smile: "It will be time to begin worrying, my son, when they stop copying them."

To Imitate is to Flatter

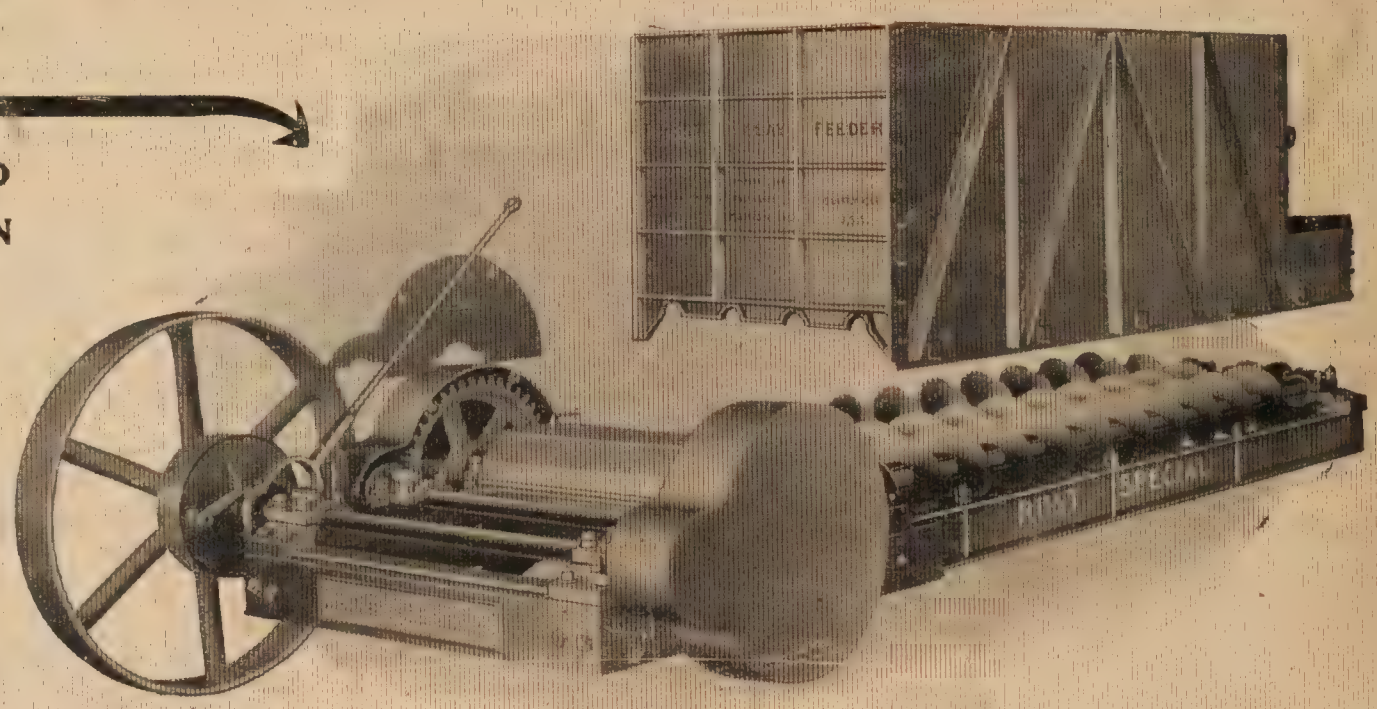
This was never more clearly demonstrated than recently in the efforts of many clay-machinery manufacturers to imitate the

New "Rust" Special Clay Feeder

We were the pioneers in bringing out the Clay Feeder for brick and tile plants, and we have spent thousands of dollars to get the "RUST" Clay Feeder established because we knew we were right. And now several others have attempted to overcome the prestige we have gained by going so far as to try to copy our design exactly.
Perhaps we ought not to blame them for this even if they are several years behind us and have been forced by clay plants to come to it. Rather do we accept it as the strongest kind of an endorsement for the "RUST."
But—to be safe and sure BUY THE ORIGINAL—then you know you are surely getting the Feeder and Mixer that

CUTS OUT THE LABOR OF TWO MEN — *Ask Us, We Can Prove It.*

SEE? →
NO EXPOSED GEARING ON THE NEW "RUST" SPECIAL CLAY FEEDER



The New "Rust" Special Makes An Uncertain Plant a Big Producer

By insuring even-tempering of the clay.
By keeping the flow of clay through the die continuous.
By making the work of the off-bearers a uniform action, without skip or break.

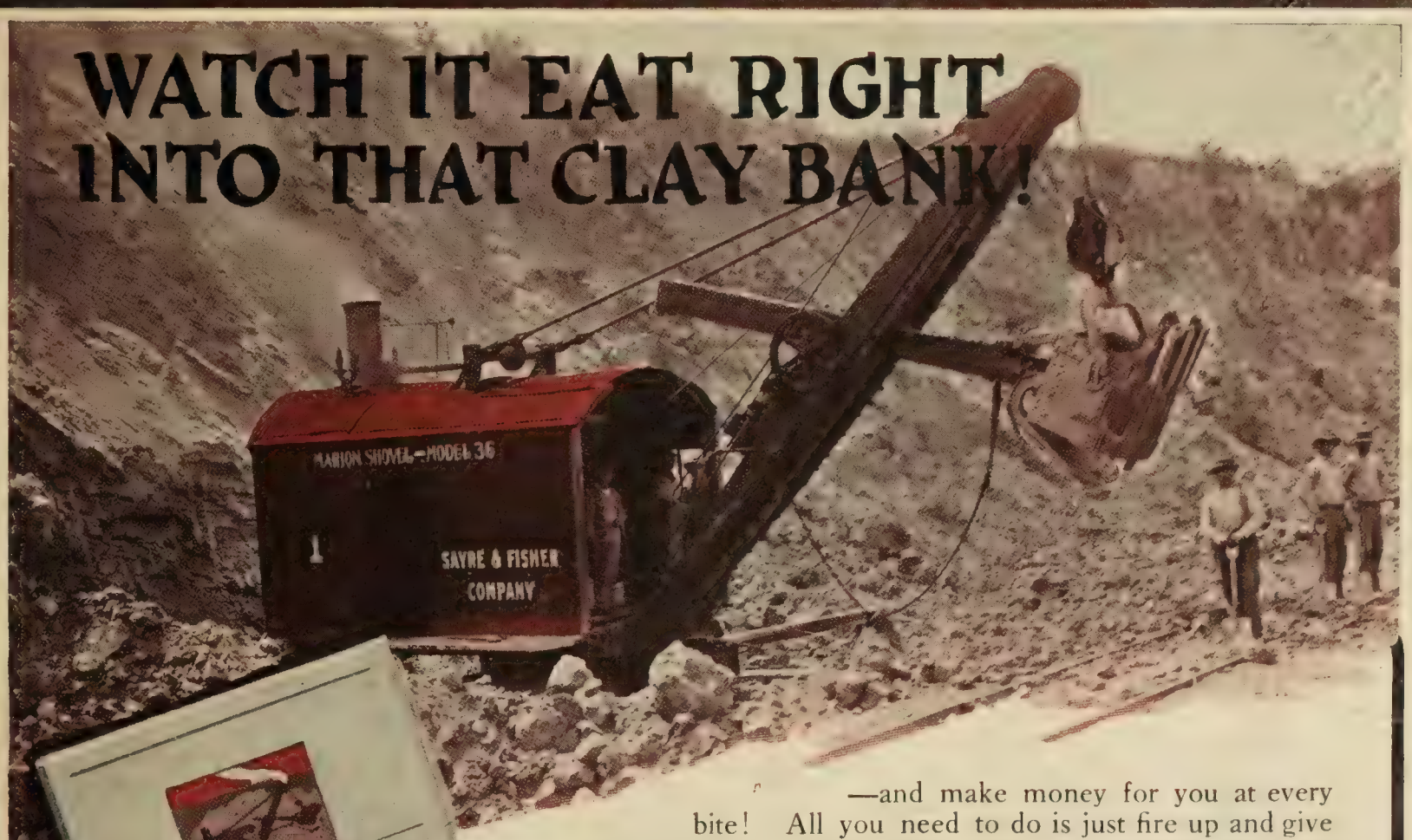
Send for FREE Book Giving Facts and Figures

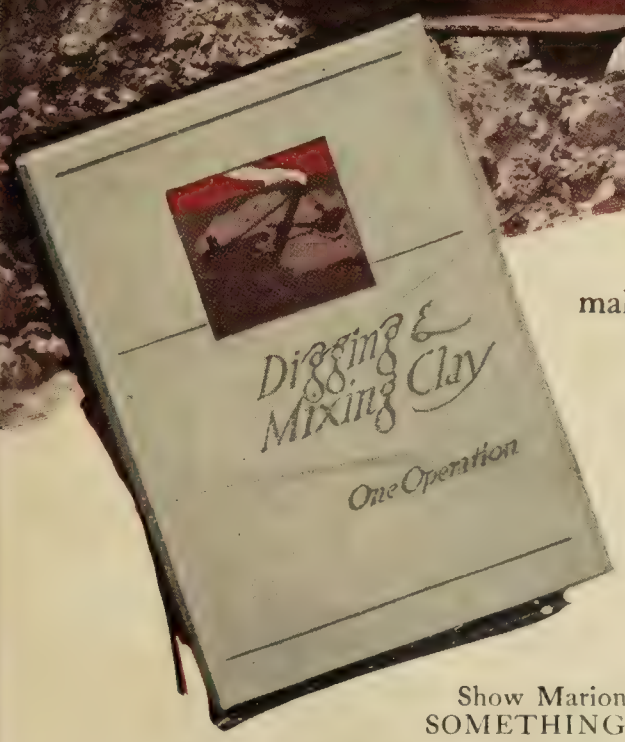
We have prepared a booklet that describes the Rust Clay Feeders—it gives all the information you will want to know about the Rust, and further produces **PROOF** of all our claims for clay-workers who have used it.

P. O. BOX 395

Marion Machine, Foundry & Supply Co., Marion, Ind.

BRICK and CLAY RECORD





—and make money for you at every bite! All you need to do is just fire up and give your Marion Shovel a piece of digging to do, and it will make and save you money at every scoop. There are

MARION SHOVELS

built especially for use in brick plants. We have devoted much time and thought to producing Shovels that will do the work *economically* and *thoroughly*. Marions not only do both, but they reduce grinding costs by *mixing the clay as it is dug*—a little from each stratum in the bank.

"DIGGING AND MIXING CLAY"—
OUR NEW BOOK, FREE TO YOU

Show Marions in actual use, with blue-print demonstrations that REALLY TELL SOMETHING. Straightforward, brief, understandable. Ask today for Catalog 37.

THE MARION STEAM SHOVEL COMPANY

STATION A *Established 1884* MARION, OHIO

Vol. XLVI, No. 7 Chicago April 6, 1915

WELLER-MADE

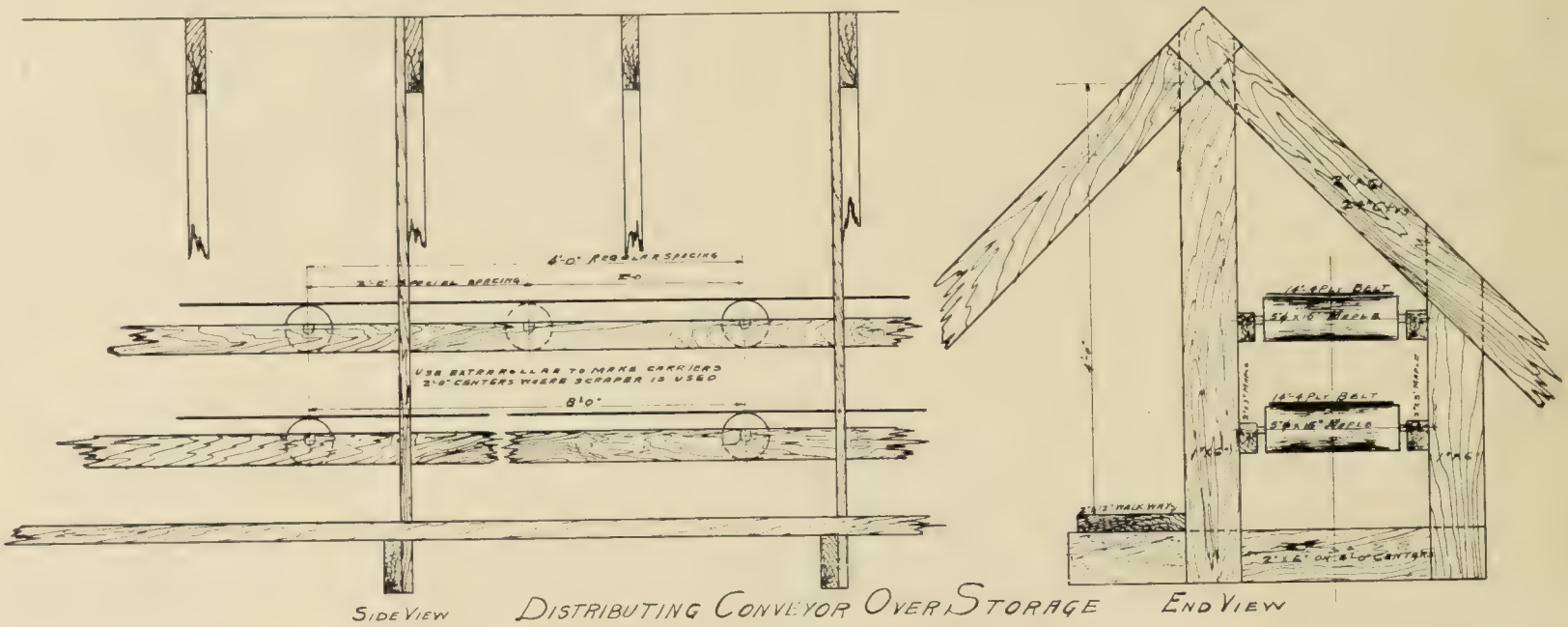
Store and Weather Your Clay

Every clay working plant needs a storage supply to carry through bad weather or delays and breakdowns in the pit

To have a good substantial supply of workable clay, always ready for instant use means full capacity regardless of weather conditions.

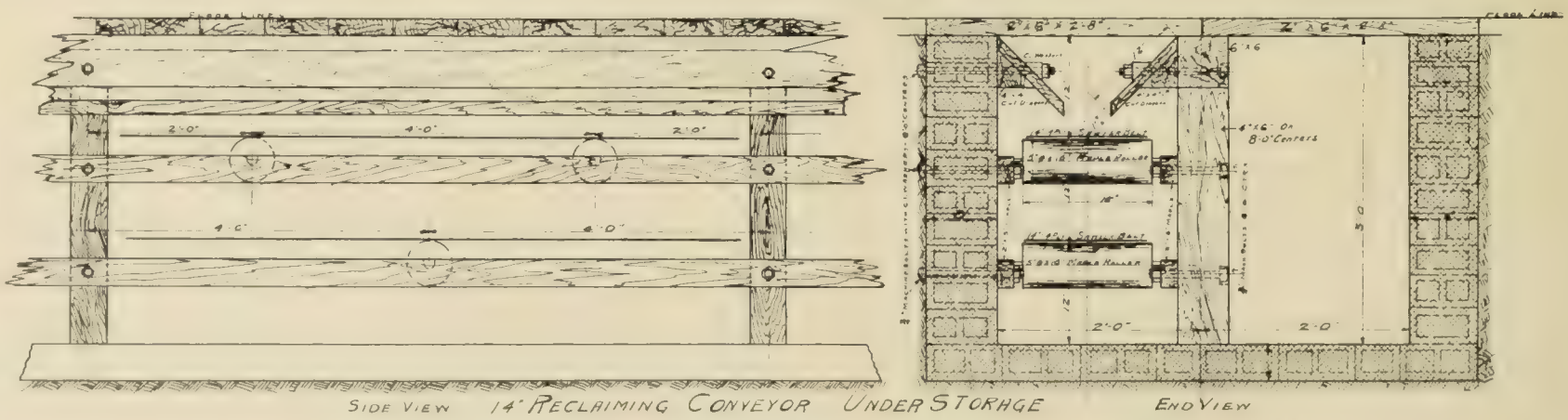
Most clays are benefited, immensely, by weathering after harvesting, especially when the clay is disintegrated before going into storage.

It makes no difference whether you are producing 3,000 or 300,000 brick per day. Whatever your requirements, we have an equipment to do your work



SIDE VIEW — DISTRIBUTING CONVEYOR OVER STORAGE — END VIEW

A simple and efficient system for putting ground clay into storage. Can be applied to any small or medium installation. Material is scraped off belt at any desired point.



SIDE VIEW — 14" RECLAIMING CONVEYOR UNDER STORAGE — END VIEW

Reclaiming System under storage. Boards on left side are loose and removable.
CAPACITY IN OR OUT OF STORAGE, 5 TO 15 TONS PER HOUR.

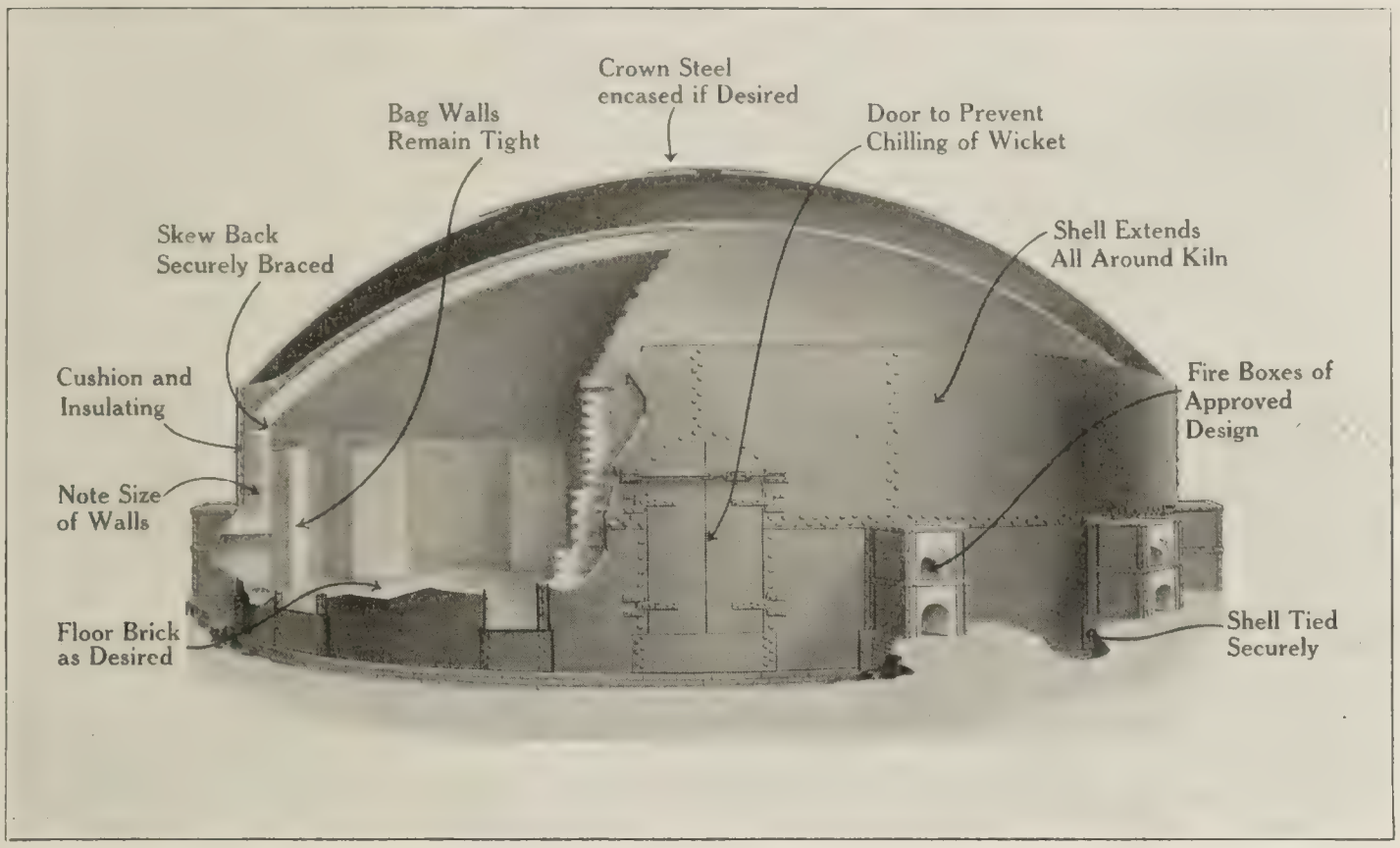
Our General Catalogue J-20 describes our full line of

Elevating, Conveying and Transmission Machinery

WELLER MFG. CO., Chicago

NEW YORK	BALTIMORE	AKRON	ST. LOUIS	DALLAS	SAN FRANCISCO
30 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Ex.	711 Main St.	316 Rialto Bldg.

The Smith Steel Encased Kiln



What Users of Our Steel Shell Kiln Say About Them

"Our firemen prefer to fire your **Steel Shell Kiln** in preference to the all brick kilns which we have."

"The kilns (Steel Shell) can be turned more often than our all brick kilns."

"We regard your Steel Shell Kilns as the best which we have on the plant."

"We get a higher percentage of good ware (in your Steel Shell Kiln) than in any of our other sixteen kilns."

"The maintenance on this kiln (Steel Shell) is enough less to justify us to build it, if there were no other advantages."

What We Claim for the Smith Steel Encased Kiln

We use a much lighter wall than is ordinarily used.

The completed cost of these kilns is no more than that of a well built all brick kiln.

We also insulate the crown if desired.

We can furnish any type of fire box to suit the kind of fuel or ware burned.

We contract to build them complete or furnish shells only.

Our kilns are fully guaranteed.

What Professor Harrop Says About the Steel Encased Kiln

The following is an excerpt from his article on "Kiln Expansion and Bracing," read before the National Brick Manufacturers Association:

"Almost 12 per cent less heat is radiated from a steel surface than from the same amount of fire brick surface under similar conditons."

"There is less leakage of cold air into and hot gases out of the kiln."

"Cracks in kiln walls, especially those near the bottom are sources of considerable loss."

Note what he says regarding saving of fuel.

CLAUDE SMITH COMPANY

KILN BUILDERS

417 S. Dearborn St. **CHICAGO**

The Claude Smith Co., 417 S. Dearborn St., Chicago.
Please send particulars regarding Smith's Steel Encased Kiln to.....

Service to Clayworkers

Alliance Brick Co.....P- 8
Alliance Clay Pro. Co...P- 5
Alsey Brick & Tile Co..P- 4
Ambursen Co..... 705
American Blower Co.... 742
American Clay Machy. Co. 711
American Enameled Brick & Tile Co.....P- 8
American Process Co... 713
Arbuckle & Co..... 730
Atlas Car & Mfg. Co... 694

Baird Machine & Mfg... 693
Ball Engine Co. (Erie Steam Shovel)..... 644
Barr Clay Co.....P- 7
Barrett Mfg. Co..... 713
Bartlett & Snow Co..... 714
Bessemer Limestone Co..P- 5
Bonnot Co..... 732
Bradford Pressed Bk. Co.P- 7
Brewer & Co., H..... 731
Broderick & Bascom.... 646
Brown Instrument Co... 729
Buckeye Rolling Mill Co. 687

Caldwell Co., W. E..... 686
Canton Grate Co..... 694
Carlyle Paving Bk. Co..P- 6
Ceramic Sup. & Cons... 685
Chambers Bros. Co..641-693
Chase Fdry. & Mfg. Co.. 715
Chicago Bk. Machy. Co. 706
Chicago Retort & Fire Brick Co.....P- 3
Cincinnati Frog & Switch Co. 715
Classified Ads.....738-739
Clearfield Machine Shops 684
Cleveland Alloys Co.... 692
Clinton Metallic Paint Co. 689
Copping Bros..... 684
Cling-Surface Co..... 685
Clinton Paving Bk. Co..P- 5

Danville Brick Co.....P- 6
Davis Fire Brick Co....P- 3
Davenport Loco. Works.. 688
Deavitt, H. M..... 684
Deckman-Duty Brick Co.P- 5
Dewey Bros., Inc..... 691
Dover Fire Brick Co....P- 3
DuPont Powder Co..... 690

Engelhard, Chas.....725
Evans Clay Co.....P- 3

Fate Co., The J. D...740-741
Freese & Co., E. M..... 733

Gandy Belting Co..... 703
General Electric Co..... 645
General Traffic Assn.... 686
Gerlock, H. W..... 684
Globe Brick Co.....P- 8
Goodrich Co., B. F.....708

Hamburg Vit. Bk. Co...P- 6
Hendrick Mfg. Co..... 688
Hetherington & Berner.. 714
Hinde & Dauch Paper Co. 685
Hook Patent Kiln Co.... 699

Jackson & Church Co... 704

Foresight or Hindsight?

You have all heard of the farmer who picked out a secluded room in which to build the finest chicken coop anyone in his neighborhood had ever seen, and which when finished was found to be too large to be taken out through the door.

There is a moral to this that we can well take to ourselves: We cannot permit ourselves to be so much absorbed with our present tasks as to be blind to the limitations of the present and the demands of the future. Too often our enthusiasm causes us to be so taken up with our own business that we fail to keep up with the procession, and soon others pass us by.

Every reader of "Brick and Clay Record" should see in this an excellent reason for reading and absorbing the advertising found in our columns. Our advertisers are studying the needs of clay products manufacturers and are offering such machinery and accessories as will make for greater efficiency.

We are very frank with those who use these columns and whenever advertising is offered us of a product that we feel cannot be successfully used by clayworkers, we frankly tell the advertiser so, because we want the advertising to be profitable to the advertiser and also helpful to our readers.

If you will consider the advertising in our columns from this standpoint and use this information as you should, you cannot fail to reap a benefit.

The letter "P" preceding a number refers to the "Pink Section"

Keller Brick Co.....P- 8
Kimbell, S. S., Brick Co.P- 8
Klose, K. W..... 688

Lakewood Engr. Co..... 695
Lehigh Car Wheel & Axle Works 687
Lehigh Port. Cement Co. 692
Link-Belt Co..... 643
Main Belting Co..... 639
Manufacturers Equip. Co. 700
Marinette Iron Works....646
Marion Machine, Fdy. & Supply Co..... 737
Marion Steam Shovel Co. .....Front Cover
Martin Bk. Machine Co.. 697
Martin Grate Co..... 698
Maurer & Son, Henry...P- 3
Mayer Brick Co.....P- 6
McArthur Brick Co.....P- 8
Metropolitan Pav. Bk. Co.P- 6
Mexico Bk. & F. Clay Co.P- 4
Mowrystown Brick & Tile Co. 689
Murphysboro Pav. Bk. Co.P- 4
Murray Iron Wks. Co... 687

N. P. B. M. A..... 736
National Dry Kiln Co.... 702
National Roofing Tile Co.P- 7
Nelsonville Brick Co....P- 5
Nuttall Co., R. D..... 707

Ohio Galv. & Mfg. Co... 715
Ohio Kiln Co..... 697

Pettigrew Foundry Co... 689
Phillips & McLaren..... 696
Pittsburgh Tile Mfg. Co.P- 7
Price Electric Co..... 687
Purington Paving Bk. Co.P- 6

Read & Day..... 686
Ricketson Mineral Paint.. 684
Roessler & Hasslacher... 695

Sackett Screen & Chute Co. 691
S. A. F. E..... 726
Sawyer Belting Co..... 727
Schaffer Eng. & Eq. Co.. 725
Schofield-Burkett 727
Shawmut Paving Bk. Co.P- 6
Smith Co., Claude..... 637
Soisson Fire Bk. Co.....P- 3
Southern Fire Bk. & Clay Co.....P- 4
Specialty Wire Co..... 686
Standard Dry Kiln Co... 712
Steele & Sons, J. C..... 735
Sterling Brick Co.....P- 4
Stupakoff Laboratories... 688
Sturtevant Co., B. F.... 701

Tecktonius Mfg. Co..... 714
Terre Haute Vit. Bk. Co.P- 7
Thew Auto Shovel Co... 728
Thwing Instrument Co.. 696

United Brick Co.....P- 5

Wallace Mfg. Co..... 734
Webb Wire Wks..... 714
Weller Mfg. Co..... 636
Williams & Co., C. K.... 684

Zook, G. W..... 684

LEVIATHAN BELTING

is never seen in a plant run without method or logic

Did you ever think of that?

It's Significant

"The successful clay man will tell you why"

Main Belting Company

Manufacturers and Engineers

Philadelphia — New York — Chicago
Pittsburgh — Seattle — Birmingham

Main Belting Co. of Canada, Ltd.
Montreal — Toronto

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson) $1.20

Brick Drying (English Edition) $1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth) $3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell) $3.00

Clays: Their Occurrence, Properties and Uses (Ries) $5.00

Clay Glazes and Enamels (Griffen) $5.00

Clays, Tables of Analyses (Crossley) $2.00

Clayworker's Handbook (Searle) $2.00

Economies in Brickyard Construction and Operation (Lovejoy) $1.00

Effect of Heat Upon Clays (Bleininger) $2.00

Engines and Boilers (Watson) $1.00

Engineering for Land Drainage (Elliott) $2.00

Estimating and Contracting (Radford) $2.00

Garage and Motor Boat Houses $2.00

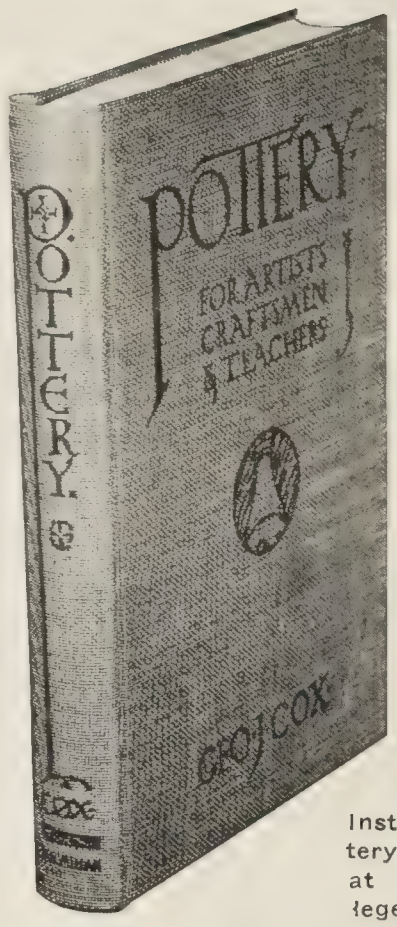
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work $1.50

Hollow Tile House (Squiers) $2.50

How to Analyze Clay (Ashby) $1.00

How to Read Plans (Radford) 50c



By Geo. J. Cox, A. R. C. A.

Instructor in Pottery and Modeling at Teachers' College, Columbia University.

Cloth - - - - - - - $1.25 Postpaid

THERE have been many books on the subject of pottery, but few of them have approached the art from the practical point of view of George J. Cox in the present book. This is not to say that Mr. Cox has sacrificed the artistic for the utilitarian, but rather that he has combined with the artistic a splendid understanding of the needs of the craftsman. His volume is not over-elaborate as many of its predecessors have been; it is not over-technical; it does not go into the matter too deeply for the use of the novice; in short, it maintains the proper balance. In addition to this it possesses a number of other excellent qualifications. Practically every process described in the text is illustrated with a clear drawing; there is a concise statement as to how the equipment may be procured; there is simple and comprehensible direction for the beginner, and there is helpful suggestion for the more experienced artist. To those who know nothing about pottery making Mr. Cox's work will be found an adequate guide, while to the more or less accomplished artisan it will be of equal service because of its sympathetic interpretation and its abundant hints.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester) 75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe) .$1.50

Modern Brickmaking (Searle) $5.00

New Competition (Eddy) $1.50

Notes on Pottery Clays (Fairie) $1.50

Observations on Pottery (Beckwith) 60c

One Hundred Bungalows (BBA) 50c

Pottery (Geo. J. Cox) .$1.25

Practical Brick and Tile Book (Dobson-Hammond) . . .$2.40

Practical Farm Drainage (Elliott) $1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill) $2.50

Producer Gas and Gas Producers (Wyer) $4.00

Producer Gas Fired Furnaces (Nagel) $2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard) $4.00

Scumming and Efflorescence (Lovejoy) 50c

Seger's Collected Works (Condensed) $3.50

Sewage Disposal Works: Their Design and Construction (Easdale) $4.00

Sewage Disposal (Fuller) $6.00

Sewers and Drains (Marston) $1.00

Sewer Pipe and How to Make It (Vogt-Turner) 25c

Smoke Prevention and Fuel Economy (Booth) $2.50

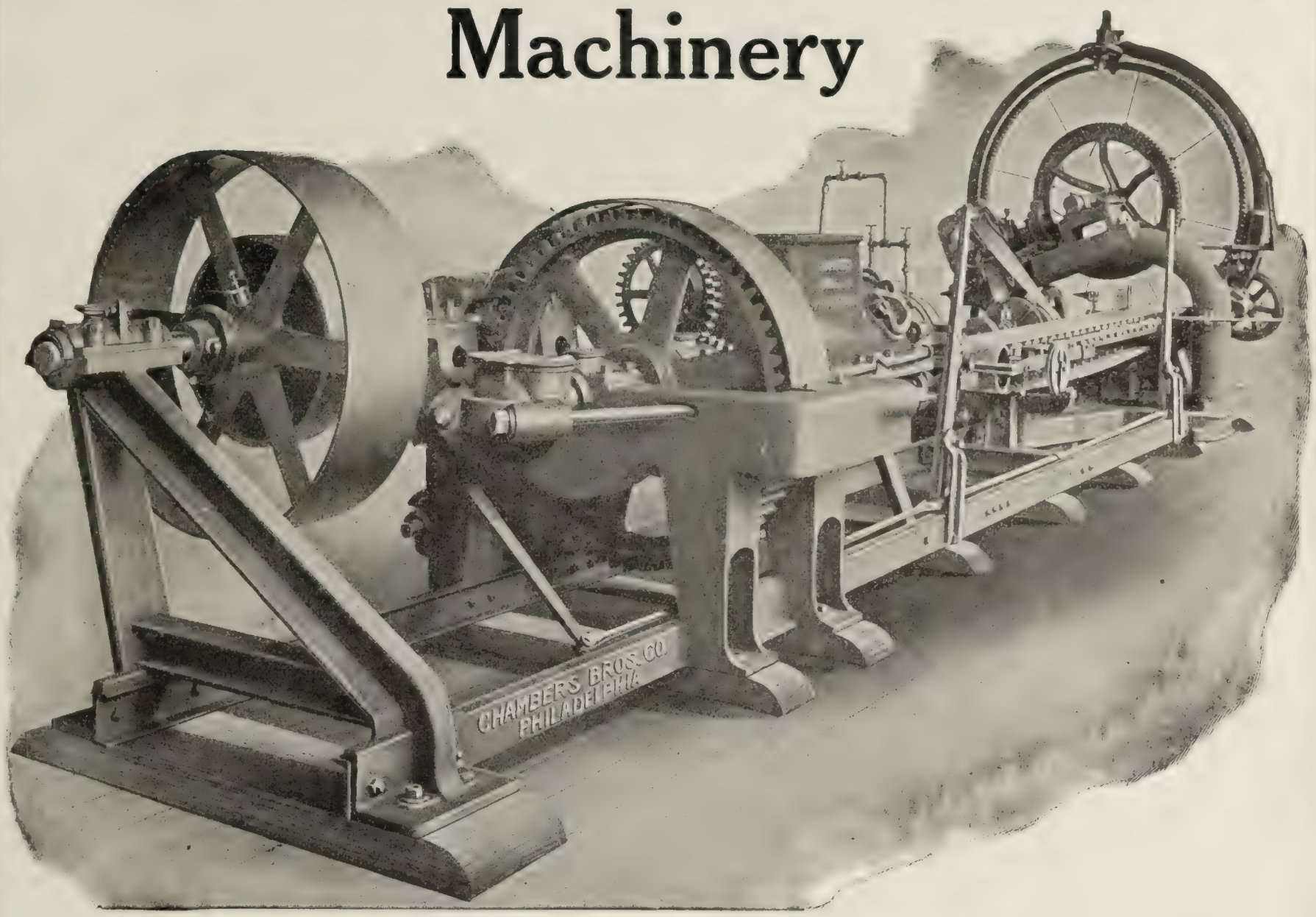
Vitrified Paving Brick (Wheeler) $2.00

Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

The Chambers Brickmaking Machinery



Standard Pattern No. 10 Brickmaking Machine with

No. 5 Rotary Side Cutter

An Auger Machine capable of making 100 standard size builders per minute, and a proportionate number of block. Will cut both brick and block thicknesses at the same time.

The No. 5 Rotary Cutter is for side cut Builders—for both end-cut and side-cut Pavers—for Fire Brick and Furnace Block work.

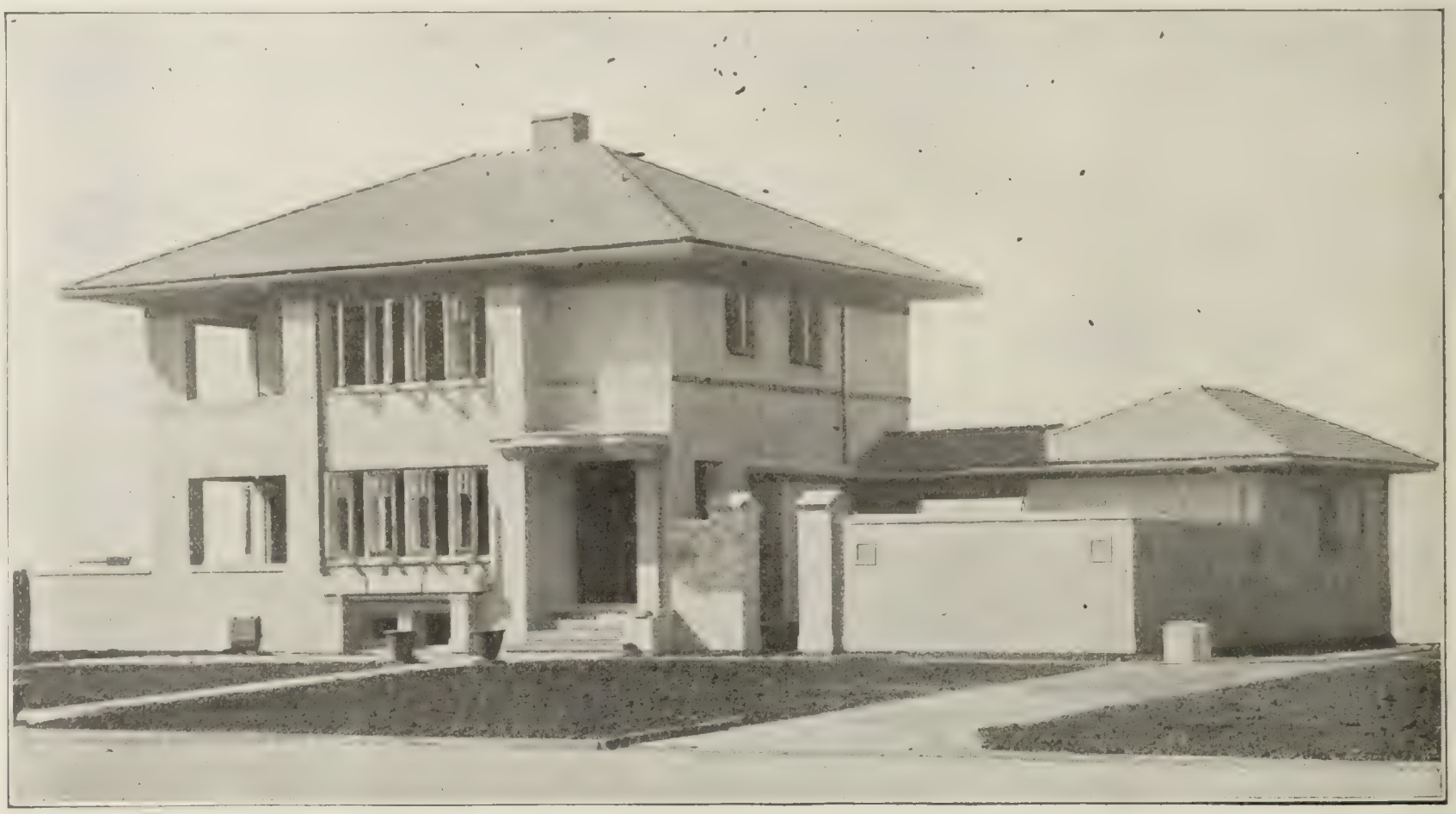
A Cutter adaptable to different products with small expense for duplicate parts.

A Continuously Rotating Cutter of Large Capacity

Dry Pans — Crushers — Disintegrators — Granulators
and Feeders—Pug-Mills of various lengths and designs.

CHAMBERS BROS. CO., Philadelphia, Pa.

(See also page 693)



The Model, Fire-Resistant, Moderate Priced Brick Residence, as it Appeared on the Morning of March 22nd, 1915. By April 15 it Will Be Completed and Occupied.

The Brick House Built for You

at the Panama-Pacific International Exposition

The appeal made to the Brickmakers of the Nation, through the medium of printed circulars, personal letters and solicitation, supplemented by the Editorial pages of the clay journals, has provided funds for the completion of this house.

The illustration shown above conveys but a small idea of the beauty of this brick home. When the window drapes and well-kept door-yard indicate actual occupancy, the question of brick's representation at the San Francisco Exposition will be answered.

The open question is, what the Brickmakers of the Nation are going to do with this house. It stands, like a piece of machinery, ready to begin work. This work is the distribution of literature telling how this house, and similarly modest brick houses, can be built for a very moderate sum, anywhere in America.

Sixty-five thousand people visit the Exposition every day. That is the average up to last week. As the season develops, this number will be trebled.

So far the work of preparing printed matter to give these people has not been started. The reason for this is very simple. There hasn't been enough money. It was only by the hardest kind of scratching that the money was raised to build the house.

Two weeks from today, a list of all those who have contributed, either money or material, will be published in the clay journals. Don't you think the project is good enough—big enough—to warrant your name being among the rest?

Make your check payable to Charles Bonner, treasurer, and mail it to Room 1205, Chamber of Commerce, Chicago, Ill.

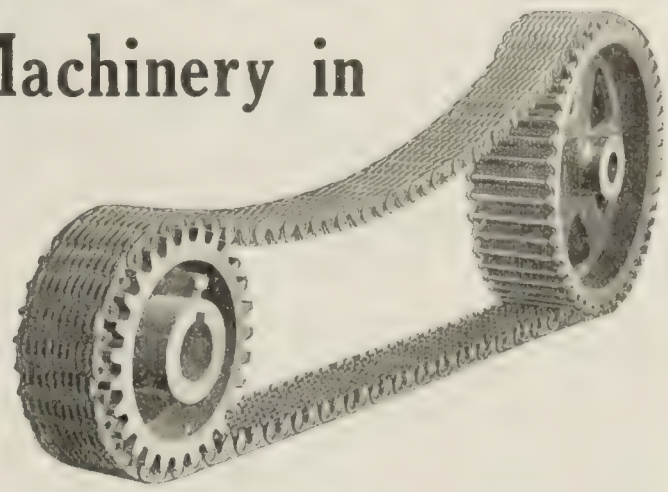
Panama-Pacific Clay Products Association

HERMAN L. MATZ, **President** CHARLES BONNER, **Treasurer**
WILLIAM P. VARNEY, **Vice-President**

Link-Belt Silent Chain

Flexible as a Belt—Positive as a Gear
More Efficient than Either

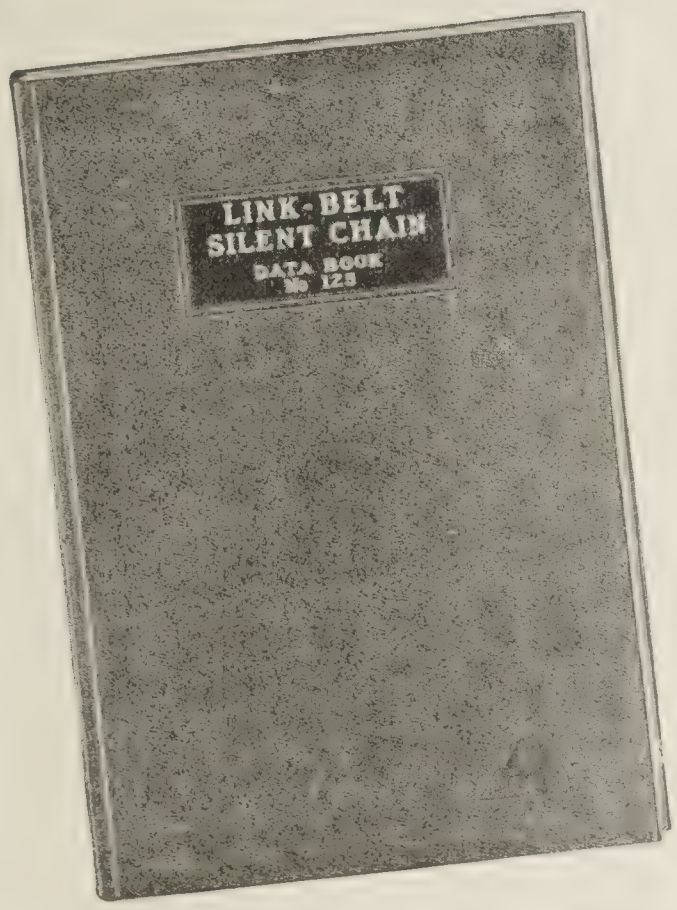
The Ideal Drive for Machinery in Brick and Clay Working Plants



For Pug Mills	*Dry Pans*
Pumps	*Blower Fans*
Granulators	*Line Shafts*
Wet Pans	*Feeders, etc.*

shows the highest sustained efficiency of all mediums for the transmission of power (98.2 per cent on actual test).

LINK-BELT SILENT CHAIN



is a superior drive because

it can be run at relatively high speeds—will run in either direction—is not affected by heat, cold or moisture—will transmit any amount of power—gives a positive velocity ratio—can be used on short or long centers—reduces journal friction to a minimum—it cannot slip—it transmits power with less loss than gears—it operates quietly—self contained bases are not necessary—with the same amount of power applied it delivers more to perform useful work.

Write for New Data Book No. 125

It consists of 112 pages, bound in flexible red cover, stamped in gold. Gives prices, method of selecting drives and full particulars. Suitable for the library of foremost engineers, superintendents and managers as well as small users of power transmitting equipment. Sent postpaid on request. Every Brick and Clay Plant should have a copy.

Link-Belt Company, 39th Street and Stewart Ave., Chicago, Ill. 1915
Please send to the undersigned, Link-Belt Silent Chain Data Book No. 125.

Name .....Firm .....

Address .....Town and State.....

Brick and Clay Record



TYPE B—¾ Cu. Yd. ERIE SHOVEL
Stripping Shale at Greer-Beatty Clay Co.'s Plant, Magnolia, Ohio

Erie Revolving Shovels

Easily Operated by One Man

A Few of the Leading Superiorities

Erie Automatic Crowding Device

Automatically controls the crowding engines. You cannot dig below grade unless you purposely desire to do so. Then you can cut any depth up to 40 inches below the working floor, without waiting to make any adjustments.

Three Levers and a Foot Brake

Entirely control shovel when digging. This makes for greater outputs as the operation of the machine is greatly simplified. Hoisting friction clutch is automatically set and released by a direct acting steam ram.

Large Working Range

Without changing position excavates 35 feet wide, on the floor bottom and 50 feet wide at a height of 8 feet.

Improved Power Steering Device

Powerful in its action, easy to connect up. The most efficient and satisfactory steering mechanism in use.

Engines Protected from Dust

Three sets of double reversing engines enclosed in dustproof, yet accessible housings.

Practically All Steel Construction

All gears are of steel. Spur gears and pinions have machine cut teeth; indestructible steel truck frame—heavy forged axles. Built for service throughout.

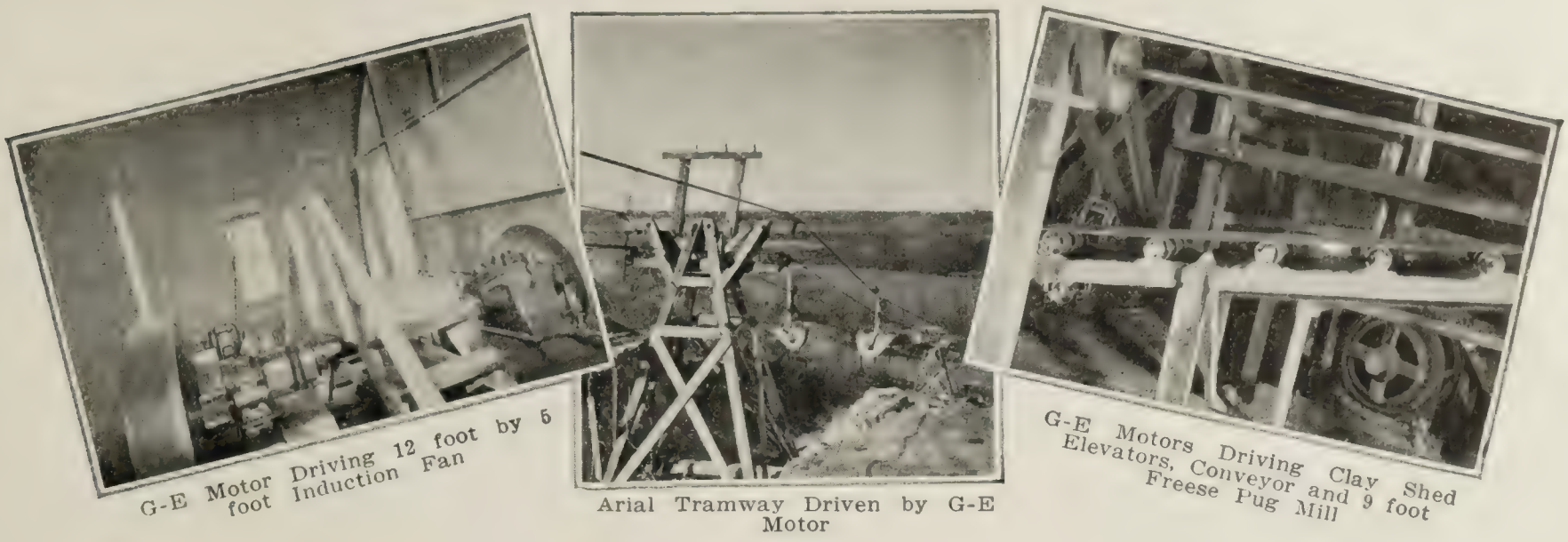
Boom and Dipper Handle

Are of Armor Plate type, built of Selected White Oak, armored with steel.

Just the Right Size for Handling Clay in Brick Plants Having Capacities Up to 150,000 Per Day. It Will Handle the Lighter Shales, Too, Without Blasting
ASK FOR PARTICULARS

You will be interested in our Catalog A — Send for it today

Ball Engine Company :: Erie, Pa.



G-E Motor Driving 12 foot by 5 foot Induction Fan

Arial Tramway Driven by G-E Motor

G-E Motors Driving Clay Shed Elevators, Conveyor and 9 foot Freese Pug Mill

Boone Brick Tile and Paving Company, Boone, Iowa

15% Saved in Cost of Operation Plant Capacity Increased 25%

The Boone Brick, Tile and Paving Company, Boone, Iowa, equipped their 70,000 brick plant with motors manufactured by the General Electric Company.

Represses, brick machine, pulverizer, pug mill, elevator and conveyor, aerial tram, induction fan, exhaust fan, disc fan and pump are all driven by G-E motors.

Before this company installed G-E motors they paid $1.38 per ton for coal. They now purchase electric power for approximately two cents per kilowatt, realizing a saving in cost of operation of about 15% and increasing the capacity of their plant 25%.

Our motor drive experts will be pleased to study your local conditions.

General Electric Company

General Office: Schenectady, N. Y.

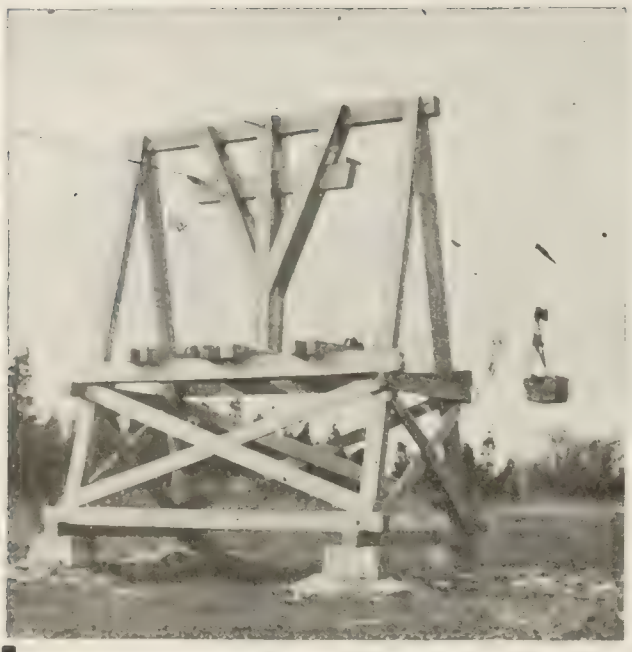
ADDRESS NEAREST OFFICE

Atlanta, Ga.	Columbus, Ohio	Kansas City, Mo.	Louisville, Ky.	Minneapolis, Tenn.	Rochester, N. Y.
Baltimore, Md.	Dayton, Ohio	Knoxville, Tenn.	Memphis, Tenn.	Nashville, Tenn.	Salt Lake City, Utah
Birmingham, Ala.	Denver, Colo.	Los Angeles, Cal.	Milwaukee, Wis.	New Haven, Conn.	San Francisco, Cal.
Boston, Mass.	Des Moines, Ia.			New Orleans, La.	St. Louis, Mo.
Buffalo, N. Y.	Detroit, Mich.			New York, N. Y.	Schenectady, N. Y.
Butte, Mont.	(Office of agent)			Niagara Falls, N. Y.	Seattle, Wash.
Charleston, W. Va.	Elmira, N. Y.			Omaha, Neb.	Spokane, Wash.
Charlotte, N. C.	Erie, Pa.			Philadelphia, Pa.	Springfield, Mass.
Chattanooga, Tenn.	Fort Wayne, Ind.			Pittsburgh, Pa.	Syracuse, N. Y.
Chicago, Ill.	Indianapolis, Ind.			Portland, Ore.	Toledo, Ohio
Cincinnati, Ohio	Jacksonville, Fla.			Providence, R. I.	Washington, D. C.
Cleveland, Ohio	Joplin, Mo.			Richmond, Va.	Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5244

Motor Agencies in All Large Cities and Towns.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



"The TRAMWAY with the PERFECT GRIP"

Regardless of weather—through rain and snow—

A

B & B Friction Grip

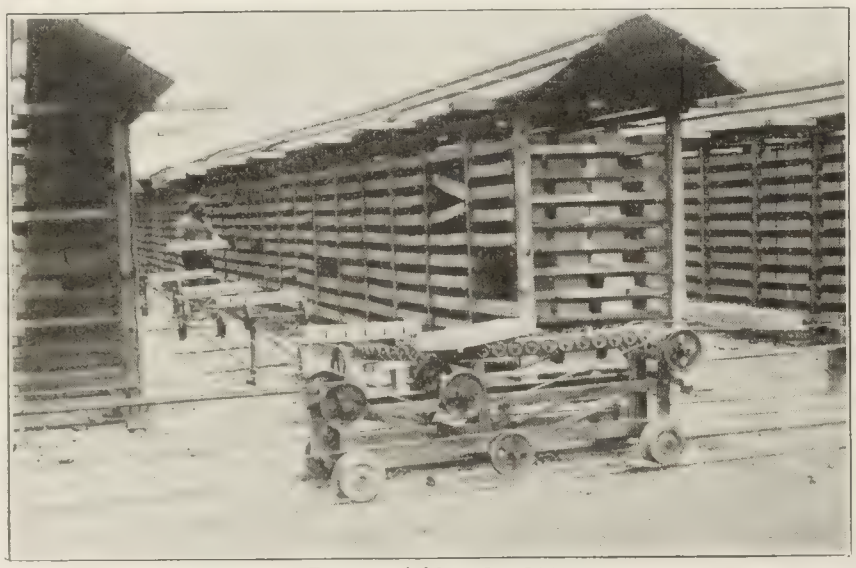
Aerial Tramway

will carry your clay day in and day out, seven days a week, three hundred and sixty-five days a year. The construction is perfect. The automatic attaching and detaching devices are simple, sure and foolproof. Maintenance is low. If the grade is sufficient, gravity will supply all the power. Let us tell you what our tramway will cost you and how much it will save you. Just explain your haulage conditions. Ask for catalog No. 16.

BRODERICK & BASCOM ROPE CO.

ST. LOUIS, MO.

Branches: NEW YORK and SEATTLE



Patented May 2, 1911.

Our first system

Voelker & Groff, of Winona, Minn., wrote us in 1912, saying:

"We have used the Anderson Brick Conveyor System for six years and find that it is the best labor saver ever invented, for a brick yard. We recommend it to anyone who is looking for a labor saving proposition. On a 50,000 capacity yard, it should save from 4 to 5 men."

Write for literature and prices.

The Marinette Iron Works

C. J. Anderson & Son, Proprietors

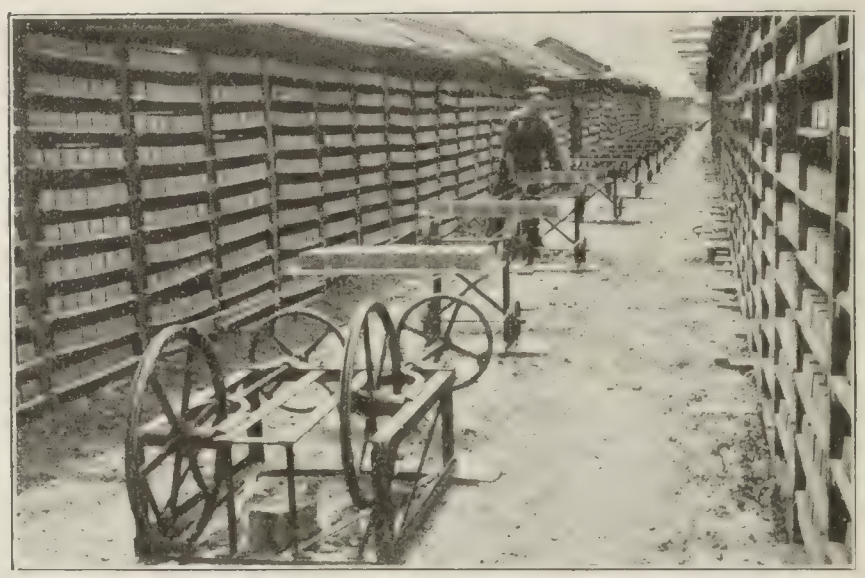
Marinette, Wis.

RAIN OR SHINE

Our last system

The Donnelly Brick Co., New Britain, Conn., says:

"Our system is working fine. We haven't had a bit of trouble so far. Even the men like it, which is a great surprise to me. We made brick the other day in the rain; the only yard in Berlin that got out the day's work. We have had quite a number of visitors here since you left and they all say the same thing—'it's great.'"



BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, April 6, 1915

Vol. XLVI No. 7

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

Table of Contents

Burned Clay vs. Lumber 665
Chicago Fire Limits Extended 650
Clay Products in Canada 661
Jersey's Historic Pottery 663
Kiln Expansion and Bracing 656
Priming Dynamite 672
Reaching the Farmer 668
Standardizing Hollow Tile 653

The Editor's Corner 554

Freight Tariffs and Troubles 680
Letter Box 678
Machinery and Equipment 681
Pottery Notes 702
Questions and Answers 674
Semi-Monthly Trade Review 687
The Superintendent 676
Wake of the News 689

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

THREE WEEKS AGO, "Brick and Clay Record" devoted two full editorial pages to the Panama-Pacific Clay Products Association. In addition to this, a full page in the body of the magazine was given to an article setting forth the critical financial problem that confronted the men who had given time, thought and money to this, the most promising publicity project ever presented to brickmakers.

The word "brickmakers" is used advisedly. While hollow-tile was used in building the interior partitions of the house, the project always has been, and always will be, a brick advertising proposition.

In addition to the circulation given the plight of those who had so unselfishly worked to make this publicity scheme a success, reprints of those two editorial pages, and of the illustrated reading notice, were prepared and mailed to two thousand brickmakers and dealers.

The net result of this appeal to the plants was two subscriptions of $10.00 each from manufacturers of hollow tile, and one of $3.50 from a brickmaker in the extreme West.

Of the brick dealers in the country, two were far-seeing enough to realize the importance of this attempt to widen the market for building brick. This out of a list of 500 circularized.

Something is radically wrong with the project or with the industry. It is an open question.

Not Very Generous

During February, an individual whose name had been mentioned in "Brick and Clay Record," circularized 500 of what he considered the most up-to-date brickmaking plants in the country. He had a proposition which was born of his own experience as a clayworker.

He had found, in his making and selling of clay products, that too large a proportion of promising prospects were lost to him through his inability to follow up mail inquiries. His was a factory that served a widely scattered territory. Many inquiries came as a result of promotion work, done in farmers' granges and by local advertising.

When the men who were thinking of buying, but who were not quite ready to buy—wrote in for prices, he, like a great many other men in the industry, found that the mere quoting of prices did not bring in the orders.

True, he liked to quote a price that brought him a profit—in that he may have been a little different from other clayworkers of whom we have heard.

He found that, in other industries, many of them immensely prosperous, follow-up sales letters were written by experts, and syndicated. That is, a letter that was worth $25 or $50 of any man's money was sold to 25 or 50 men, and at something like $1 each. It paid the man who wrote the letters and it paid the men who subscribed.

This clayworker tied up to a man who had the "gift." He put quite a sum of his own money into specimen letters and, as has been written, sent his circulars, with these specimen letters, to 500 brickmakers.

He received four replies; one advised him that he had a grand little idea, but that he would have a hard time getting any brick men to pay for his services; another wanted to know more about the idea and intimated that a little later, they might "come in"; a third said he would subscribe, if no other brick concern in his state were given a like service, and a fourth sent $25—the fee that was asked for a full year's splendid sales help.

And, in the meantime, the National Brick Manufacturers' Association appoints a com-

mittee of ten to "find ways and means" of extracting something like $180,000 a year from the brickmakers of the United States.

This committee of ten will need some of Billy Sunday's persuasive power before it will lead the industry up the "sawdust trail" of ready response to publicity propositions.

Shows Some Promise

It is encouraging to learn that, in different parts of the country, some clayworker, a little more progressive than his fellows, has gone into a campaign of local advertising, following, in some instances, the suggestions made by trained advertising writers who contribute to the columns of this magazine, or, as in one case that comes to mind, writing his own display copy with a singularly strong hand. These men find that advertising pays, even in the limited way that they are compelled to adopt.

It is a well known fact that, in many small cities, the great daily papers from nearby and larger cities, are widely circulated. Oftentimes the local paper is anything but a molder of opinion.

If these pioneer advertisers were able to buy space in the papers that are printed in the larger cities, they would bring their message of safe building home with a greater forcefulness —which means with a greater result.

Yet for one manufacturer to expend the amount necessary to buy attractive space in any of these more widely read journals would be poor business policy. He would be paying a price much beyond the results he could expect to obtain. Yet if, by combining with other manufacturers who shipped into that market, he could advertise, and so increase the demand for brick in the section where that paper was generally read, he would stand a fair chance of realizing on the money he invested in advertising space.

It could be made doubly effective, in the case of face-brick manufacturers, if they could select a city where there was an association of dealers, and suggest that they would contribute to an advertising fund, in which the dealers would spend an amount equal to that spent by the manufacturers, and so work hand-in-hand for a better market.

This is, of course, bringing up the same old subject, albeit in a different form. But the time is ripe. Brickmakers must advertise or lose a great and golden opportunity. Never has the prospect been so bright in the building world. Never has the United States been so near to being a "creditor nation." The stock exchanges have cancelled the minimum price rule, having found it unnecessary. The credits recently granted the warring nations of Europe make positive the return of our industrial securities, formerly held by European investors. And they will come back to us at a good price —not being "dumped" on a weak market.

Artificial stimuli have been given the building trades. Newspapers are devoting whole pages to the "Build Now and Save" propaganda. But unless the brickmaker talks right out in meeting, the building boom will give him his usual meager share.

The brickmaker should remember that eighty per cent of the country's residence construction goes into frame. By a slow process of extending fire-limits, he may compel men to be sensible—but that eighty per cent will keep on going to frame for some time to come, if legislation is to take the place of education.

And, in the meantime, the schools and libraries and office buildings, all of which used to be brick, are now some brick, some hollow tile and some reinforced concrete.

The law of averages marks building construction. Like the lean and fat kine of the Old Testament, the famine building years follow those of plenty. And the proportion of brick used to the amount spent in building construction, is decreasing.

This, despite the fact that it has long been called "the best building material known." And—because of the fact that brick manufacturers are not, by any manner of means, the best of business men.

The path is plain before you. Brick will not gain the ground it has lost to hollow tile. Nor, unless it enters upon a stupendous advertising campaign, will it gain the ground it has lost to reinforced concrete. Its logical line of attack is upon frame.

Chicago Adds Twenty Miles to Her Fire Limits

After Months of Hearings and Investigations the "I Will" City Adds a Territory Larger than the Whole Area of Many Cities to the Zone Restricted to Fire-Resistant Building.

EXTENDING THE FIRE LIMITS in almost any city gives prominence to several industrial conditions. Principal among these are the solidarity of the lumber interests and the lack of coordination in all branches of fire-resistant construction material.

Extending the fire limits in almost any city, as a rule, starts in some public spirited body, such as the Association of Commerce. As soon as any publicity is given the project, a hue and cry is raised that "certain parties interested" are behind the movement. This almost invariably means that the manufacturers and sellers of burned clay are accused of being alive.

These allegations, for the main part, are without ground. The manufacturer of burned clay is, as a rule, the last man to support or work for an ordinance that not only means a better town in which to live but a better business for him. Like many other things that are for his development, he feels, perhaps, that it will be indelicate for him to apear too much in the limelight.

Somehow or other, the lumbermen are not troubled by any delicacy of this kind and, seeing in the proposed extended fire limits a certain menace to their future business, they line up and, having started the idea that someone else is working for personal gain, proceed to get busy themselves.

This "getting busy" is, as a rule, effective. While there is a limit to all fire limits and a point where the placing of a ban against building of flimsy wooden dwellings would be somewhat ridiculous, every man who has the well being of his community in mind, will agree that the town thrives within its fire limits, and that it is better to err on the side of too much safety than to go the other way.

All of which is to introduce the fact that Chicago, the second city of America, has just added twenty square miles to the zone of restricted building. Another five or six square miles has come within the provisional area, in which it is impossible to build a frame dwelling without first securing the consent of a majority of the property holders on both sides of the four streets surrounding the plot upon which it is proposed to build.

Several months have been spent on this project, and the map of Chicago's fire limits gives ample proof of the kind of "work" that was done. At various points within the newly added territory are plots from half to three-quarters of a mile square where frame building is allowed and these little islands of frame buildings are entirely surrounded, as it were, by territory in which frame buildings are prohibited.

The causes which led to this peculiar condition are easily traceable. Threatened on one side with an enormous political influence, exerted by men with millions invested in timber lands, sawmills and lumber yards, and on the other hand by pressure of individual groups of speculative builders, Chicago's councilmen had great difficulty in retaining their seats on the fire limits band wagon. It was only by the most careful driving of this vehicle that the committee having control of this extension of the safety zone, was able to prevent enough of these councilmen being jolted off, to form a majority against the ordinance.

All ended happily, however, and although the advocates of a larger zone of safety were disappointed, all those who have Chicago's interest at heart, are glad to know that the city on Lake Michigan has taken another step in the path of progress.

Twenty square miles, even though they be scattered over a territory which, were it not for the "islands" excepted, would be perhaps more like forty than twenty, is a goodly addition to the field in which the brick men can now work with some chance of success.

Many interesting points were brought out during the discussions before the committee which had the ordinance in charge, among these being the fact that where residence construction was concerned, about ten per cent of the men who had built in frame during the past five years, had been individual owners; the other ninety per cent had been the speculative builders and it was openly charged that this was due to the fact that "jerry construction" was possible in frame buildings to a much greater degree than those erected of more fire-resistant materials.

In other words, it was stated and not denied, that a speculative builder could, by "scamping" his work, put up a more presentable article in the housing line, in frame, than he could if masonry were used. As these speculative buildings were bought, as a rule, by the poorer class of investors, they had but little redress. It was a case of buying cheap and "getting stung."

As time goes on and the Chicago "I Will" spirit pervades to greater limits of the territory she now rules, ordinances which restrict the activities of all those who prey upon the inexperience of the small investor, will be stopped. Chicago can stand a more rigid building code than now governs, and some of her most patriotic citizens have said that if it were not for the strong front presented by the lumbermen of the Middle West metropolis, Chicago's code would be the model for the entire country—a country that has waited, for many months, until New York cut, and slashed and punched and riveted its building code into something that will compel safe and sane construction in the home of the Tammany tiger.

Some idea of the work that was done by the advocates of a better, safer city, can be seen in the following account, published in the "Insurance Post," a Chicago weekly:

Hearings on the proposed extension of the fire limits in Chicago, which have been in progress for several months, are nearing their completion. The residents of the various wards interested have been heard from, and a meeting was held set aside for the consideration of the general principles involved, disregarding purely local matters. The fire prevention interests were given a free field to present their views, the only persons appearing in opposition being A. B. Cone, editor of the "American Lumberman," and an official of the Carpenters' Union. The fire prevention program had been well arranged, so that all the various angles of the proposition were presented, and it is believed that the full building committee will approve the report of the sub-committee, and that a very material extension of the fire limits will be made.

J. C. McDonnell, chief of the Chicago Fire Prevention Bureau, was the first speaker. He showed that the Edison fire, which the lumber interests have made much of, started in a wooden, tin-clad building, and spread to a number of frame structures, soon attaining conflagration proportions. He also discussed the Salem conflagration, showing that it was due to wood construction and shingle roofs, and then presented a long list of Chicago fires in each of which more than eight buildings were burned, nearly all of them due to the kind of construction forbidden by the fire limits.

F. E. Davidson, president of the Illinois Society of Architects, presented resolutions adopted by that organization, urging that the fire limits be extended to the city limits. He argued that because of the more rapid depreciation of frame buildings, the people outside the fire limits were not paying their fair proportion of the tax burdens. T. R. Weddell, speaking for the National Fire Protection Association, urged that the ordinance be considered as a fire prevention measure, and not be befogged by controversies over various kinds of building materials, real estate interests, labor union politics, etc. He showed that all those qualified by experience to speak with authority agreed that there was a dangerous conflagration hazard in Chicago—the fire department, the fire prevention bureau, the building department—the only denials coming from the lumber interests and individuals with no expert knowledge of the subject.

W. D. Matthews, superintendent of inspections for the Chicago Board of Underwriters, recalled to the committee how they started a fire, using kindling so arranged as to burn rapidly and secure a draft, and showed how frame buildings complied exactly with these requirements and so are much more combustible than other types. He also gave statistics as regards the rates on brick and frame construction.

C. D. Waterbury, of Pond & Pond, architects, chairman of the committee which prepared the statistics on the comparative cost of construction of frame, brick and concrete cottages, which have been submitted to the committee, told how carefully this had been prepared. He called attention to the fact that although the opposition had questioned these figures, in more than fifteen months of opposition and delay they have not presented any statistics other than contradiction to controvert them.

Perhaps the most effective evidence was that presented by Robert J. Knight, deputy building commissioner of Chicago. Mr. Knight punctured the claim upon which the opponents of the extension chiefly relied—that restrictions would prevent the poor man from building and owning his humble cottage. He tabulated the records of the building department from April to September, inclusive, of 1914, as the months of great activity in building operations. These statistics showed plainly that the poor working man of whom so much is said does not build his own home, and when he does, prefers to build it of brick or concrete, even though he is building outside the fire limits, where there is no restriction whatever on his choice. Of 5,494 permits issued during the period 3,672 were for brick buildings and 1,822 for frame. Of the latter, 871 were for frame cottages to cost less than $2,000, the type of the working man's cottage. Of these, permits for only 100 were taken out for the district outside the fire limits, by the owners, all the others being by speculative builders, the permits being taken out in quantities. In addition to the fact that so small a number of frame cottages were erected outside the fire limits by owners, he showed that of the brick permits issued 475 were for brick buildings outside the fire limits, where frame could have been used, if it was so urgently preferred.

D. E. Woodbury, representing the carpenters' district council, spoke in opposition to the extension, claiming that he represented 22,000 working men whose interests would be adversely affected by the extension. A. B. Cone, of the "American Lumberman," presented a number of charges, showing the fires in brick and frame structures, and arguing that it was little more in frame than in brick. Fred W. Lloyd, an appraiser, discussed the matter of depreciation, showing the disadvantages of frame construction in this regard.

The above account is typical of many meetings. The fire-prevention interests lined up pretty strongly, and had a splendid line of "character witnesses." Lumber, on the contrary, had few to speak a good word for it, yet—forty miles dwindled to twenty, and Chicago's fire-limits map looks like a crazy-quilt.

Thomas A. Edison Uses Brick

The engineering magazines are carrying an advertisement, inserted by the Trussed Concrete Steel Company, of Youngstown, Ohio, with the display line "Fire Test Decides Thomas A. Edison in Selecting United Steel Sash." The following interesting information is then given:

"Thomas A. Edison Co., Inc., scientifically investigated all makes of steel sash before making selection for refitting their plant. * * * A fire test was made * * * on February 3, 1915, in a special building constructed for the purpose. The two sash were built into opposite walls with the flames between them. The fire was of unusual severity, consisting of celluloid films and dry wood saturated with kerosene. For one hour this roaring furnace burned. United Steel Sash remained intact throughout this ordeal, but in the other sash one light of glass gave way. A stream of water at high pressure was thrown against the two sash, without injury to the United Steel Sash, but with a loss of four lights by the other sash."

A large illustration accompanies the story quoted. It shows that the "building" constructed for this "unusually severe" test was built of brick.

Unfortunately the photograph from which the illustration is made is very distinctly marked "Copyrighted by Thomas A. Edison" and this magazine is, as a consequence, unable to reproduce it.



THE BRICKMAKERS' HOUSE AT THE PANAMA-PACIFIC EXPOSITION

Imagine the Warm Color of the Rough Surfaced Red Brick, the Contrasting Shade of the Clay Roofing Tile, the Complimentary Setting of Well Mown Grassy Lawns and See What Has Been Done for You at the San Francisco Exposition. If You Are One of Those Who Subscribed to the Fund That Made it Possible—Behold the Work of Your Hands. If You Failed in that, Remember That There is Still a Large Amount Needed for Literature to be Distributed to the Visitors Who Will Want to Know More About Brick Houses and What They Cost

Getting Its Second Wind

Panama-Pacific Clay Products Association Completes First Step in Great Publicity Move

YEARS AGO, when you tried your speed in foot races with your playmates, you used to hear a great deal about "getting your second wind." That is what the Panama-Pacific Clay Products Association is doing, now.

Within a week, a directors' meeting was held, at which pledges were given to a sufficient amount to insure the completion of the house, the payment of balances due on various contracts and the day labor necessary to turn the house over to its caretaker, ready for occupancy.

So the Panama-Pacific Clay Products Association has completed the first step of its program, which was, as you have already been told, "To Promote the Use of Burned Clay Products through Publicity and, as a Part of the Initial Campaign, to Build a Modern, Low Cost, Fire-Resistant Residence at the Panama-Pacific International Exposition."

The "initial step" is taken, but the strenuous effort it caused has left the men who took it, almost breathless. Not that the house was hard to build, but that the brickmaking industry is hard to separate from any real money.

It is promised that, in the next issue of "Brick and Clay Record", a list of those who have contributed, either in cash or material, will be published. When this list is made public, the total number of men contributing will be found to be very small. The amounts, on the contrary, have been large—the common brick manufacturers of Chicago gave $1,000.

The second lap of the race is on. It is to raise money enough to keep the house in order for the balance of the time that the exposition remains open. Everyone knows, who reads the papers, that the exposition is far from being completed, yet, up to this time, the average daily attendance has been 65,000.

When this house is open for inspection, it will receive, probably, 20,000 to 50,000 "guests" a day. Someone has said that this number is impossible, and has reduced it to so many a second. Let it go at that, and say that a solid stream of people will pass through that house from the moment it is opened in the morning, until it closes at sundown.

At least half of these people will want to know why it was built, and how it was built, and what is going to be done with it. They cannot be told verbally. They will take away descriptive literature.

This literature can tell them what you tell your customers, regarding the economy of brick construction. The house itself will tell them how beautiful brick construction is.

Are you going to let this house go unexplained, because *you* can't see where *you,* personally, are going to get any benefit out of it? Can you see, then, where the men who have given to the fund to build the house, are going to get *more out of it than you are?* Or are you just naturally of a suspicious disposition?

To Reap the Benefit

of the money so far expended an additional $8,000 is necessary. Your check for $100—or $10 will make the work just that much easier

Read the Advertisement on Page 642



J. A. MAAHS,
President, Hollow Building Tile Mfrs. Assn. of America



CHARLES T. HARRIS,
Secretary, Hollow Building Tile Mfrs. Assn. of America

Standardizing Hollow Tile

New Association of Hollow Building Tile Manufacturers Adopts Constructive Policy and Outlines Reforms

ASSOCIATION WORK is in the air of the business world. Manufacturers in all lines of industry are getting together for the betterment of their business conditions. The old spirit of mistrust, which led a man to single out other workers in his own industry as being unworthy, has been replaced by what may be called a spirit of sympathy.

Men have grown tired of working along lines that produce nothing but sharper competition and, year by year, lower selling prices, smaller profits and greater expenses. Many of them are of the same mind as a certain manufacturer, who said that he was "kept busy reducing costs in order that he might make a living profit and still meet reduced selling prices."

Hollow building tile, made of burned clay, have occupied an honorable, if not an ancient, place in the world of building materials. Up to a very short time ago, practically all of the manufacturers of this material spent a very considerable portion of their time in trying to keep some other hollow tile manufacturer from making a profit upon his material. This was not due, altogether, to "cut" prices, but rather to the increased expenses of selling and to the complications that were made a part of the system of manufacture. This relates, in great part, to the multiplicity of shapes.

The business has rapidly outgrown these earlier conditions, but they remain and serve to hamper and hinder its higher development.

The day of the individual manufacturer's "going it alone" is past. Today he is manufacturing articles that are securing recognition, being backed up by association work; this work has many purposes, the greatest of which may be grouped and called "better service." The interchange of ideas, the mutual solution of problems met in manufacture and in sale, the standardization of product and distribution, all work toward the greater efficiency of the man allied with one of these associations. It is all in the ryhthmic step of progress and the man who elects to "go it alone" finds himself out of harmony and fast falling behind.

Association work is a modern development in business life; it has succeeded to the previous efforts, made to form combinations and trusts. Association work, starting on a firm foundation of mutual helpfulness, is able to promise a magnificent and successful structure.

The Hollow Building Tile Manufacturers' Association of America has been organized but a few months. The results, however, are surprising and gratifying. In this time a great deal of preliminary work for the benefit of the Association has been accomplished; but, best of all, there has been developed a spirit of consideration and cooperation among the members that prophesies rich results for the future. The Association has already begun a standardization of material and tests which will simplify, unify and clarify the method of making and placing hollow tile upon the market.

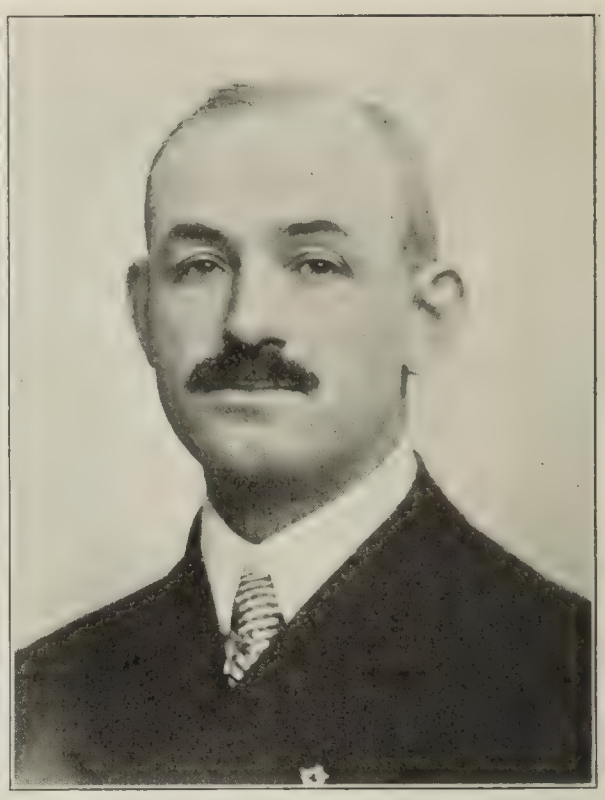
Tests have been undertaken as to fire-resisting prop-



R. W. Allison, Vice-President



R. E. Whitacre, Treasurer



C. W. Denison, of Cleveland

erties, crushing and tensile strength that, it is expected, will be accepted by architects, engineers and writers of specifications and building codes as authoritative and unquestioned. The preliminary work to secure this result is now being done and the result will justify all the claims that have existed heretofore as to the merit of burned clay hollow tile. It will also form the basis for further claims.

PREPARES CODE OF BUSINESS ETHICS

A selling plan, or, as it might be called, a code of business ethics, is being prepared, under which the members of the Association will place their product upon the market under conditions that will make for uniform selling methods. Extravagant claims, that being made by one manufacturer, and afterward proved ill-advised, may injure the entire industry, and this is being guarded against. In many ways, these improved selling methods are in accord with the business methods that have been established in other large lines of industry, and they will include the conditions under which sales are made, the character of the competition, the questions of credit and terms of payment, the matter of shipments and claims, all of which will be governed by the best practice that can be found in approved lines of manufacture.

PUBLICITY PLANS BEING PERFECTED

The Association has already entered upon a scheme of publicity and later hopes to incorporate an extended campaign of general advertising. It has recognized that this work is being done, not alone for the present members of the Association, but for those manufacturers of burned clay hollow building tile who will later join the ranks and fall in step with the Association's constructive work.

Every public spirited movement has its pioneers and the men who form the Hollow Building Tile Manufacturers' Association of America may well be called the pioneers in the movement which promises the steady and substantial advancement of the industry destined to attain a still greater importance, in the near future. As more and more of the manufacturers of burned clay hollow build-



Frank W. Darling, of Chicago



Henry H. Camp, of Cleveland



B. C. Keeler, of Mason City

ing tile join with those who have started this Association movement, the greater the campaign fund and the greater the effectiveness of the work that is now under way.

There can be no doubt but that this work will create better conditions in the hollow tile business. There cannot be any doubt but that costs of production will be lessened and profits increased. This need not, of a necessity, be through the raising of the selling price and, in point of fact, it is not proposed to do anything in the way of regulating prices.

On the contrary, however, an increased demand for hollow building tile and a lessening of the competition which it now receives, not only from other burned clay material, but from cheaper forms of construction, will have a tendency to give burned clay hollow building tile a better selling value. Better prices will surely follow.

MEETINGS ARE OPEN

All of the meetings of the association, with the exception of the one held by the Executive Committee, are open to the public. Invitations are sent, urging the attendance of every one interested in the properity of the hollow tile industry, and, where these invitations fail to reach all of the men who should receive them, recourse is taken to the columns of the trade press, as in this instance.

At the coming meeting, which will be held at the Hollenden Hotel in Cleveland, a well considered program has been provided, and in order that those who stop to read may know with what care these meetings are conducted, and how valuable they can be made to the industry, the program, as outlined, is given below:

9:00 A.M.—Meeting of the Executive Committee.

10:00 A.M.—General session of the Association, open to all members, their friends, and visitors.
Regular Business.
Report of Committee on Tests, R. W. Allison.
Report of Committee on Codes, W. C. Denison.
Report of Committee on Business Ethics, F. W. Darling.
Report of Association Work, Charles T. Harris.

12:00 M. —Luncheon.

2:00 P.M.—"The Hollow Tile House," Frederick Squires, architect; Virgil G. Marani, engineer and E. V. Johnson, manufacturer.
Remarks on Conservation of Resources, by James G. Hinde.
General Discussion.
Adjournment.

Evening —Meeting of the Executive Committee, if necessary.

If you are engaged in the manufacture or sale of hollow building tile—the kind of hollow building tile that is made of burned clay—it must suggest itself to you that you ought to be numbered "among those present" at this meeting. Your going there doesn't mean that you have to "join" anything, or pay out any money, other than your railroad or carfare. But it will mean that you will meet the thinking men of the industry—the men who are doing things to make it a better field in which to earn a livelihood.

Recommend Law Against Wooden Shingles

"A committee of five city officials and fire experts named by Fire Prevention Commissioner O'Keefe of the Metropolitan Fire District (which comprises Boston, Cambridge, Brookline, Arlington, Belmont, Chelsea, Everett, Lynn, Malden, Melrose, Milton, Newton, Quincy, Revere, Saugus, Somerville, Waltham, Watertown, Winchester, Winthrop and Woburn, Mass., a radius of about ten miles) has rendered its report on the subject of the advisability of ordinances forbidding the further use of wooden shingles for roof coverings. The committee recommends the passing by every city and town in the district of an ordinance as follows:

"The roof of every building erected or re-covered in whole or in part, and the top of every dormer window thereon, shall be covered and roofed with brick, tile, slate, tin, copper or iron or any other incombustible or fire-retarding roofing, as the commissioner by his certificate in writing may authorize; but this section shall not be construed to prohibit the patching or minor repairs of shingled roofs."

At a hearing held last October, when the above committee was named by the fire prevention commissioner, the latter pointed out the danger of another fire in any of several localities similar to that which swept away a large portion of Salem.

We Have Something to Learn About Fire

In this country, if one's store takes fire, burns out and communicates fire with a resultant loss to his neighbor's store the fire department puts out the fire, the insurance company pays the losses to both, and the matter is ended. In the foreign countries, the local government immediately makes an investigation of the cause of the fire and if it is found that it resulted from the carelessness of him on whose premises it originates there is a claim on the part of his neighbor against him which can be enforced in court. Not infrequently, too, the matter becomes a case for public prosecution and the levying of a public penalty upon the offender.

In some of the eastern states it is now proposed that such responsibility be enforced and the State of New York has gone so far as to judicially determine that a property owner who refuses to comply with recommendations of the fire department is responsible for costs to the department for its work in fighting a fire on his premises. In this case, if several firemen were injured and some apparatus impaired in value, the loss to the fire department is judicially held to be due to it from the owner of the property in question.

We do not want any such stringent system in Michigan but we do want more care and a broader system of education of the public with regard to the forms of carelessness which may result in fire losses. Even though the fire loss be compensated for by insurance there is no profit to the community in the destruction of capital values. Our profit lies in the conservation of our wealth, not in levying a tax upon wealth to restore the items that have been destroyed.

If half the energy that is being directed against insurance companies and their methods were expended upon the education of the public in teaching it not to encourage fire loss, our state would be much better off at the end of 10 years.—"Michigan Manufacturer and Financial Record."

Perhaps They Came for Business

A correspondent writes: "We notice that a great many who attended the National Brick Manufacturers' convention at Detroit evidently came for a good time, as they left their wives at home." For some men, these annual trips to far away cities are oases in the desert of life, while to others they are a painful duty. Much depends upon the more-or-less-silent partner—and upon the man.

Kiln Expansion and Bracing

A Practical Dissertation on, and a Solution of One of the Most Vexing Problems in the Burning of Clayware

By Carl B. Harrop, E. M.

Assistant Professor, Ceramic Engineering, Ohio State University.

THIS PAPER was the sensation of the National Brick Manufacturers' Convention, recently held in Detroit. Superintendents and managers of some of the largest plants on the American continent made a point of requesting its early publication. As a consequence, its careful perusal is urged upon everyone who has to do with the burning question in a clayworking plant. The paper will be published in two installments, of which this is the second. Reprinting is forbidden, since it forms a part of the copyrighted proceedings of the N. B. M. A., and is here published by special permission of that organization.

(*Continued from March* 16 *issue*)

CRACKED WALLS

Seldom is any attention paid to the cracks which appear from time to time in the outside walls of kilns and it may be interesting to give some consideration to their influence on the heat economy of a kiln.

Two pressure zones usually exist in the interior of a periodic kiln. If the clay plug is removed from the upper peep hole, or if a vent in the crown is uncovered, flame and smoke are emitted, showing that there is a pressure in this part of the kiln in excess of atmospheric pressure.

If the lower peep hole is opened, no flame or smoke appears, but there is a decided flow of air through the hole into the kiln, which is evidenced by the cooling down of the ware in close proximity to the hole, if the latter is left open for several minutes. This indicates a pressure in this part of the kiln which is less than atmospheric pressure or we may speak of it as suction or draft. Between these two zones is a neutral level, at which neither smoke and flame come forth nor cold air enters, a pressure just equal to atmospheric pressure.

If there are many cracks in the upper part of the kiln walls, considerable heat may be lost in the escaping gases. However, this leakage can be readily seen and the largest of the cracks filled up and daubed with mud. On the other hand, it is not such a simple matter to find the leaks in the lower part of the kiln, although they can be easily closed when once located.

Some burners realize the importance of stopping these leaks, and make a practice of going around the kiln during the latter part of the burn with a lighted stick, testing all suspicious looking cracks, and daubing all those which show a tendency to draw in the flame.

The lower or draft zone may extend five to six feet above the floor, depending upon the intensity of the draft. In the lower part of the kiln wall, from the floor up to say five feet above the floor, suppose we find an accumulation of cracks, all of which together would allow as much cold air to pass through as would go through a single hole three inches in diameter.

If the average draft or static head in this part of the kiln is 0.2 inch (water gauge), then in a small crack through the wall, it would probably be reasonable to assume a dynamic or velocity head of 0.1 inch. Introducing this velocity head into the following formula, will give the velocity of air passing through the 3-inch diameter hole in feet per minute.

$$V=4{,}000\sqrt{h}$$
$$V=4{,}000\times\sqrt{.1}=1{,}264 \text{ ft. per min.}$$

Area of opening 3 in. in diameter=about 0.049 sq. ft.

Then, $1{,}264\times0.049=61.94$ cu. ft. air per min.

or 89,194 cu. ft. air per 24 hrs.

or (if burn lasts 7 days), 624,358 cu. ft. air per burn.

Approximately 12½ cu. ft. air=1 lb.

$$\text{Therefore, } \frac{624{,}358}{12\frac{1}{2}}=49{,}949 \text{ lb. air per burn of 7 days.}$$

If the average stack temperature during the 7 days' burn is 900° F. and the mean specific heat of air is 0.24, the total heat carried away by this air will be

$$49{,}949\times0.24\times900=10{,}788 \text{ B. t. u.}$$

If coal used has a heating value of 11,000 B. t. u.

$$\frac{10{,}788{,}984}{11{,}000}=981.0 \text{ lb. coal required to cover this loss.}$$

Besides this direct expenditure or loss of fuel, there is another one, much more important, but which can hardly be calculated.



Fig. 14

This leakage of cold air into the lower part of the kiln makes it more difficult to secure the desired temperature on the bottom. The burn is, without doubt, frequently lengthened 6 hours on this account, which means that all the fuel during

the 6 hours is lost, the burner's and fireman's time wasted and the kiln tied up on that particular burn 6 hours longer than necessary.

RECTANGULAR KILN BRACING

There seems to be a tendency to simplify the construction of the brick staves used for bracing the walls of rectangular kilns. The usual double channel (Figure 14), or single I-beam stave of small size, stiffened with a truss rod and king post, is being replaced by the single I-beam of larger size and without truss rod as shown in Figure 15.



Fig. 15

It will be noticed that when using single unbraced I-beams, the usual method of securing the tie rod is by use of U bolts and eyes in the ends of the tie rod, as shown in right-hand insert, Figure 15. This method, however, requires forging, which is costly. Another method is to use a special rough casting, placed on the outer flange at the top, which obviates the necessity of any machine work whatever on the I-beam. This casting (left-hand insert, Figure 15) designed by the writer several years ago, serves the double purpose of washer and clamp. The tie rod passing directly over the center of the I-beam and through the casting, prevents the latter from



Fig. 18

dropping, while the greater the tension in the tie rod, the greater is the grip of the casting.

A comparison of these two forms of staves, from a standpoint of both strength and cost, is interesting.

Assuming the channel stave to be constructed as shown in Figure 16, using uniformly distributed loads as a means of comparison and using 16,000 as allowable fiber stress per square inch.

Bending Moment of truss rod = stress in truss rod × distance of center of truss rod from the neutral axis of the combination, which ordinarily would be about 1-in. from the neutral axis of the beams.

$$\text{B. M. of truss rod} = 9{,}621 \times 22 = 211{,}662$$

$$\text{B. M. of the 2 channels} = \text{section modulus} \times \text{allowable fiber sterss} = 8.6\ (4.3 \times 2) \times 16{,}000 = 137{,}600.$$

$$\text{Total B. M. due to load} = \frac{W\ 1}{8}$$

$$\frac{W\ 1}{8} = \text{B. M. of truss} + \text{B. M. of the 2 channels.}$$

$$\frac{W \times 14 \times 12}{8} = 211{,}622 + 137{,}600.$$

From which we find that

$$W \text{ (safe load)} = 16{,}630 \text{ lbs.}$$

Whereas, a single 10 in. 25 lb. I-beam (Figure 17), on the same span is capable of carrying a load of 18,610 lbs., indicating that the I-beam is about 12 per cent stronger than the branch channels.

Assuming that the I-beam and the braced channels are both 16 ft. long, and including the tie rod washer casting in each case, their comparative costs are as follows:

Cost of One Braced Channel Stave

2 Channels 256 lbs. @ $1.35	$3.46
1 Rod ⅞ in. Rd. × 15 ft. 30¾ lbs. @ $1.45	.45
2 Castings 85 lbs. @ 2½	2.13
4 Bolts	.15
Blacksmith and assembling labor	1.00
	$7.19

Cost of One 10 in. 30 lb. I-Beam Stave

1 I-Beam 400 lbs. @$1.35	$5.40
1 Casting 25 lbs. @2½	.63
No Labor	
	$6.03

The I-Beam costs 16 per cent less than the braced channels.

Figure 18 shows a rectangular kiln without the end bracing. In building these kilns, the battered end walls were laid last and contain vertical pockets, into which the side walls may expand.

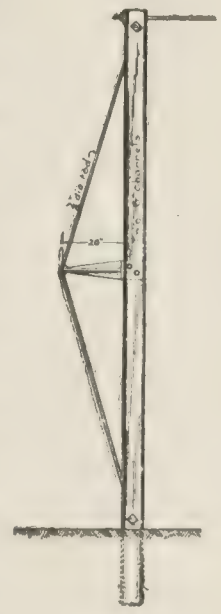


Fig. 16

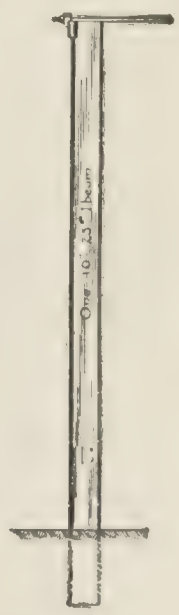


Fig. 17

The principal use of transverse bracing on a rectangular kiln is for the purpose of holding the crown in position, but before this bracing is designed, it is necessary to determine the amount of the thrust produced by the arch. In general, it may be stated that, with the span remaining the same, the flatter the arch, the greater the thrust at the heel and the heavier the arch, the greater the thrust.

The usual form of crown consists of a true arc of a circle from spring line to spring line, using the beveled "skewback" brick as a starter. Another form of starter, which has been used extensively by some kiln designers, consists of about seven courses of No. 2 wedge brick, which lay to a radius of 15 inches—the main arch resting on the top course of these wedge brick.

It has been thought that by the use of this latter construction, less horizontal thrust from the crown resulted. As grounds for this belief, an instance is recalled where the band of a round kiln burst after a burn was well under way. Much to the surprise of the observers, the crown did not collapse, but the kiln was allowed to cool, the band replaced

and the burn carried to completion. It has been thought that a crown with the ordinary skewback starter would not have stood up under the same circumstances.

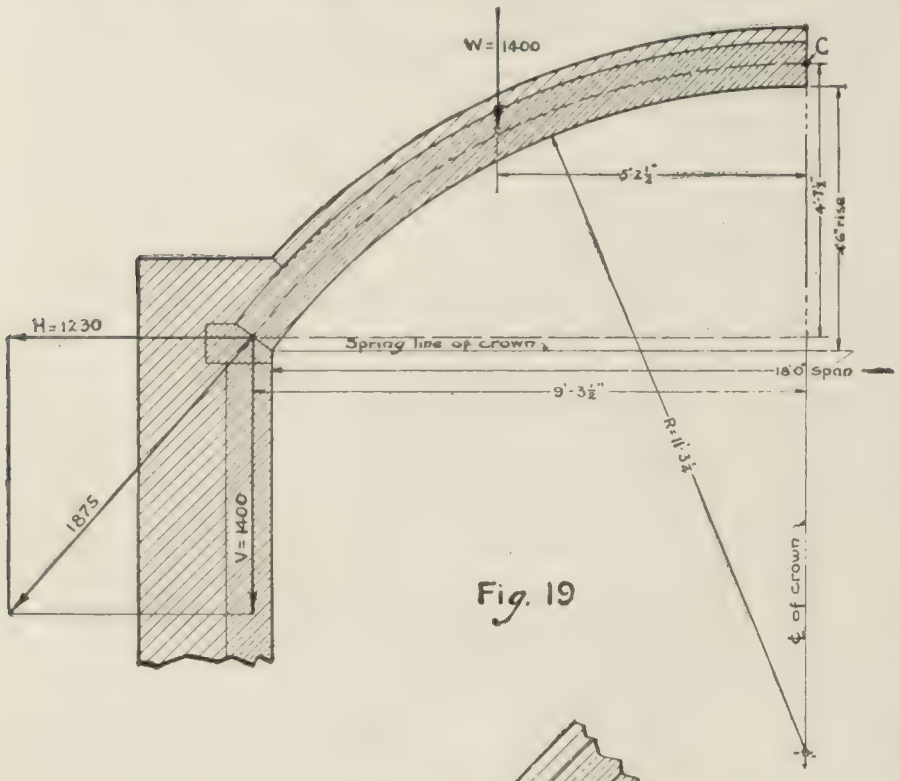


Fig. 19

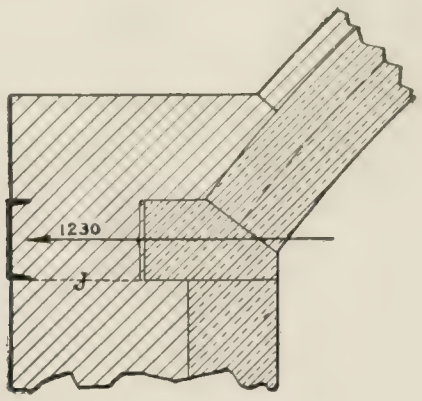


Fig 20

The results of calculation covering these two forms of crown show that for the same span and total rise, the one with the wedge brick starter courses produces the greater ultimate horizontal thrust, although there is some difference in the internal stresses resulting at the heel in the two cases.

Figure 19 represents the usual form of crown, having an 18 foot span and a 4½ foot rise. The total thickness of crown is 12 inches. Taking a section 12 inches wide for calculation, and dealing with only half of the arch, the weight of this one square foot section extending from the center down to the skewback will be 1,400 lbs. (Weight of one cubic foot of brickwork—130 lbs.) This load, applied at the center of gravity of the section, will produce a pressure R on the skewback, which may be divided into two component forces, V (vertical), equal to the load and H (horizontal), to be determined.

Taking moments about point O.

$$Hx4.625+1,400x5.208=1,400x9.291$$
$$H=1,230 \text{ lbs.}$$

Thus, on each lineal foot of skewback (measured lengthwise of kiln) there is being applied a horizontal pressure of 1,230 lbs. The skewback is 8 inches or three courses of brick high. This pressure is transmitted to these three courses and they, in turn, transmit the pressure to the 8 inch steel channel, as shown in Figure 20.

If our vertical braces are 7½ feet apart, there will be transmitted to each buckstave, from the wall channel, a horizontal pressure of 9,225 lbs. which, with kilns of ordinary height, will produce a tension in the tie rod at the top of the buckstaves of 5,600 lbs. Using 16,000 lbs. per square inch as the allowable tension in steel, a tie rod 11-16 inch in diameter will be required.

If the steel brace extends 14 feet above the ground and if this pressure of 9,225 lbs. is applied at a distance of 5½ feet below the top of the brace, the size of I-beam required can be determined.

$$\text{Maximum bending moment}=\frac{(8.5\times12)\times2\times9225\times(5.5\times12)}{2\times(14\times12)}$$
$$=369,659$$
$$\text{Section modulus}=\frac{369,659}{16,000}$$
$$=23.1$$

The smallest standard I-beam having the above section modulus is a 10-inch, 25-pound beam.

Figure 21 illustrates the crown with wedge brick starters. Considering only that part of the arch above the starter courses, it will be seen that this span is almost as great as that of the complete arch with skewback starters and the rise is considerably less. Proceeding to take moments about point C, as in the former case,

$$Hx3.708+1,290x4.833=1,290x8.916$$
$$H=1,420 \text{ lbs.}$$

This shows clearly that, though the weight of the starter courses is not taken into account, the horizontal thrust is considerably greater than in the case of the crown with skewback starter.

However, it will be noticed that the bed joints of the wedge brick courses are not radial from the center of the main arch circle, with the result that the arch pressure will not be transmitted from one wedge brick to another in a direction perpendicular to their faces.

The result is that the top course of wedge brick has a tendency to slip (outwardly) off the second course; the second course a greater tendency to slip off the third course, etc. The relative forces causing this tendency to slip are represented by the lines r (Figure 22). Each of these forces

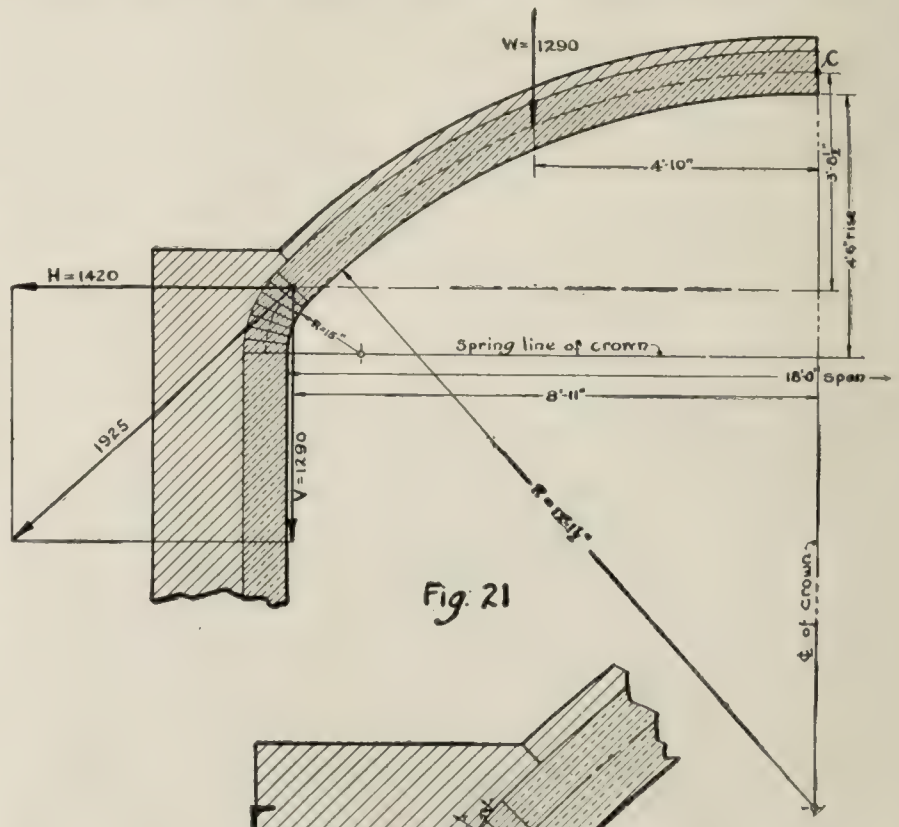


Fig. 21

Fig. 22

may be resolved into two component forces—one vertical and one horizontal, the latter being represented by the lines h. The sum of these horizontal forces will be somewhat in

excess of the single horizontal thrust of 1,420 pounds in Figure 21, as the weight of the wedge brick courses is taken into account in this case. It will be noted that, while in Figure 20 the total horizontal thrust is against three courses of brick, in Figure 22 the thrust is distributed in varying amounts over a greater number of courses. However, this does not alter the conclusion that the crown with the wedge brick starter has the greater total horizontal thrust and, therefore, should be more strongly braced.

EXPANSION OF RECTANGULAR KILN CROWN

It is generally supposed that as a kiln is heated up, the thrust from the crown increases very rapidly. Theoretically and practically, this is not true in a rectangular kiln. As the crown becomes heated and expands, it is perfectly free to rise. When the crown has risen, say ¾ inch, the rise of the arch will have increased, and this, with the same span, will result in a lessening of the horizontal pressure at the heel. On the other hand, this is probably more than counterbalanced by the dropping of the line of pressure in the arch. The temperature being very much greater on the inside of the crown than on the outside, the inside will expand the greater amount, resulting in the opening up of the bed joints on the outside. The line of pressure will drop from near the middle of the 9-inch arch down to a line near the inside surface, where the brick are in perfect contact. The net result will probably be only a slightly increased horizontal pressure at the skewback.

The endless number of ways in which round kilns are banded and the variety in the dimensions of these bands would seem to indicate that their selection is little more than guesswork.

THE STEEL ENCASED KILN

The idea of casing the entire side walls of a kiln in a steel jacket seems to have some merits.

(a) The kiln walls are more apt to remain plumb and intact.

(b) There is less leakage of cold air into and hot gases out of the kiln.

(c) The action of the elements is kept from the walls to a large extent.

(d) Almost 12 per cent less heat is radiated from a steel surface than from the same amount of fire-brick surface under similar conditions.

If there could be placed between the steel jacket and the kiln wall, a layer of mineral wool or other lasting material of low heat conductivity, the radiation from the side walls of the kiln would undoubtedly be reduced considerably, although it is understood that by far the greater part of the radiation from a kiln takes place from the crown, which is usually less than half as thick as the side walls.

STRAIN IN WALLS OF ROUND KILN

To calculate the strain in the walls of a round kiln, produced by the crown, let us assume a kiln 30 feet inside diameter, having a crown rise of 6 ft. 9 in. as shown in Figure 23.

Assume the crown to be divided vertically into sections, 12 in. wide at the heel and tapering to zero width at the center. The crown is about 12 in. thick and taking the weight of brickwork as 130 lbs. per cubic foot, one of the sections will weigh 1,125 lbs. With this load applied at the center of gravity of the section, and taking moments as before about the point C,

$$H\times 6.875+1{,}125\times 10.916=1{,}125\times 15.291$$

whence

$$H=720 \text{ lbs.}$$

Thus, a horizontal pressure of 720 lbs. is acting radially at each 12 inches of the circumference of the circle passing through point D. Figure 24 gives a plan view of the sections and horizontal forces.

In calculating the necessary strength for steam boiler shells, the pressure to be carried is considered as acting in only two directions.

The circular section is divided into halves and the pressure per square inch to be carried is considered as acting in opposite directions in the two halves—against the surface of each half and a direction perpendicular to the line of division.

The product of the pressure per square inch and the diameter (or projected area of half the circumference) in inches will give the total pressure acting on a circular section of one inch width, and tending to pull the two halves apart at the two points E.

Using this same method in connection with the kiln crown,

$$\frac{30.583\times 720}{2}=\text{approximately } 11{,}000 \text{ lbs.},$$

the tension at any one point in a steel band encircling the kiln at the spring line.

Using steel with a tensile strength of 16,000 lbs. per square inch, it is seen that less than ¾ of a square inch section of steel is required; i. e., a band ⅛ inch thick and 6 inches wide would be ample.

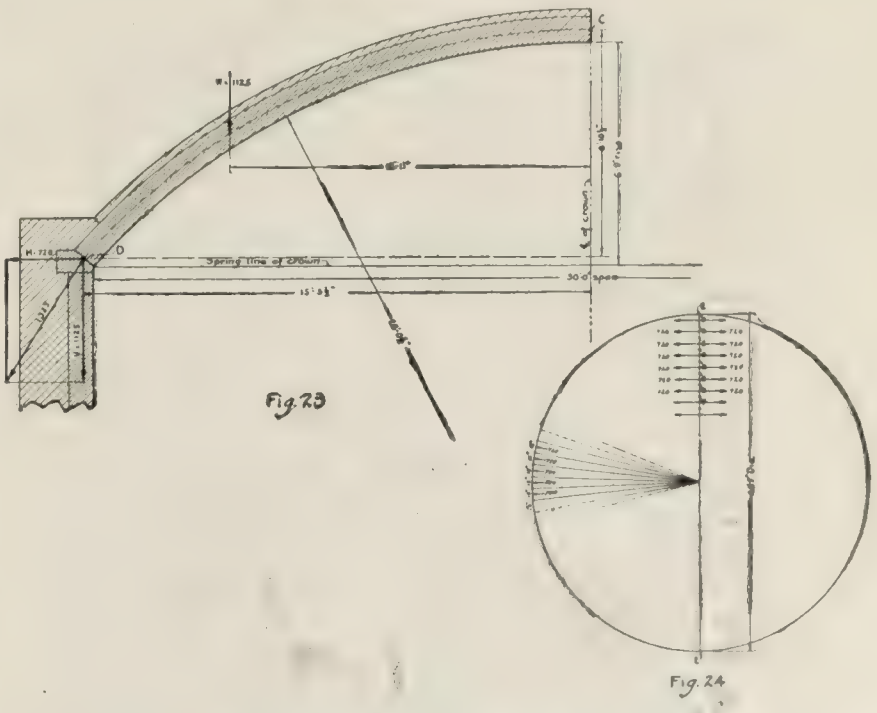
This caculation is made under the assumption, that the steel band is the only opposition to the horizontal pressure. This assumption is not correct, as the vertical component of the crown thrust produces considerable friction at the joint J, which, with the resistance offered against being pulled apart by the bond courses of brick encircling the skewbacks, also opposes the horizontal pressure to some extent.

From the foregoing, it would seem that the crown in itself does not produce as much thrust as is generally supposed and that the sizes of steel bands ordinarily used to hold the crown are unnecessarily heavy.

Instances are cited where heavy steel bands have bursted, but in such cases, the real cause is undoubtedly the expanding (with insufficient expansion joints) of the circular wall inside the band, together with the pressure from the crown and not the crown alone.

EXPANSION OF ROUND KILN CROWN

The circular expansion of the lower part of the crown of a round kiln in conjunction with the expansion of the upper



part of the kiln wall is capable of exerting considerable pressure against the steel band, if space is not left in the vertical joints for expansion, or if these spaces become partly filled. Otherwise, the round kiln crown (like the crown of the rectangular kiln) being free to rise and fall, due to the diametrical expansion and contraction, should exert when hot

but very little more pressure at the heel of the crown than when cold.

CONCLUSIONS

(1) Expansion force is practically irresistible in kilns.

(2) Expansion joints are a prime necessity.

(3) The greater the number of expansion joints in a given length of wall, the smaller can they be and the less the chance of damage to the wall.

(4) It is possible to make expansion joints too large.

(5) Thorough binding of lining to the main wall is essential.

(6) The crowding out of kiln walls is inevitable (except in cases of very special construction), but this action can be retarded to a great degree by first-class material and careful workmanship.

(7) Probably the greatest damage is done by the expanding of the kiln floor. The floor should have expansion joints on all sides.

(8) Cracks in kiln walls, especially those near the bottom, are sources of considerable loss.

(9) The single I-beam brace for rectangular kilns is stronger and cheaper than the older form of trussed channel brace.

(10) Steel end bracing on rectangular kilns is not essential.

(11) The wedge brick starter for rectangular kiln crown arches has no advantages over the ordinary skewback starter, although in round kilns there may be some slight advantage.

(12) Theoretically the crown of a rectangular kiln produces but very little more thrust at the heel when hot, than when cold.

(13) The steel bands used for supporting the crowns of round kilns are often made heavier than necessary.

(14) If the upper part of the wall of a round kiln and the lower part of the crown contain sufficient expansion joints to take care of horizontal expansion, there should be but little more thrust at the heel when hot than when cold.

ERRORS AND OMMISSIONS

Professor Harrop has called "Brick and Clay Record's" attention to the following errors, that crept into the first installment of his article on Kiln Bands and Bracing:

On page 567—In the second and third paragraphs, directly under "Fig. 1," references are made to points "A" and "B." These points are not indicated on the curve sheet illustrated. Point "A" should be at the lower end of curve No. 2, and point "B" at the lower end of curve No. 3.

On page 568—In the third line from the bottom, first column, the text reads "to such a degree as to give ground for the"; this should read "which gives ground for the."

On page 568—In the second equation from the bottom of the first column, the answer to the equation is given as 28 in.; it should read 0.28 in.

On page 569—In the twelfth line from the bottom of the first column, the text reads "and it does not crush"; this should read "and if it do not crush."

Looking Into the Future

Prosperity and making paving brick seem to go hand in hand. And very close to prosperity comes the high-power motor car. Were its use for pleasure only, the paving brick manufacturer would ride only on brick paved highways.



Seeing a little into the future, however, it might be well for this prosperous and ease loving individual to seek the by-ways that join the highways he skims along so lightly, and, as he finds one that is muddy and productive of strong language, to ease his mind in a way that brings no blush to the ear of the casual pedestrian—that is—don't swear.

Go back, instead, to the place under the seat where are concealed one, or two or three "Pave with Brick" signs, and tack them up where they will be seen.

Do the same when you strike a cement-coated highway that has deep waterholes where the wheels of commerce have torn up the "permanent" paving and pointed the way to costly repairs. Then turn to the brick paved road again, with a sense of a duty well performed and a lesson in right paving given to those who shall come after you.

Canada's Fire Losses

At the thirty-third convention of the Mutual Fire Underwriters' Association, Toronto, Feb. 23, Mr. Thomas Hoskin, the president, said that Canada fire record is the worst in the world, and her fire losses would pay off the national debt in less than 20 years. Wooden buildings, badly constructed chimneys, and sparks from engines were given as reasons for the fact that the fire losses in Canadian cities are seven times greater than in Great Britain. In the past ten years the amount of risks had increased 50 per cent, assets 69 per cent, and losses 84 per cent.

Brick veneered and cement block veneered dwellings were placed in the second-class risks. Tenant losses, it was decided, should be two-thirds of the value, and the owners be paid in full. All outbuildings within 25 feet of each other may be covered by a blanket policy. The association refused to prohibit the insurance of threshing machines. They favored not issuing a policy for more than three years, and favored insuring live stock to full value.

Losses due to smoking by the assured or any other person with the knowledge of the assured should not be paid, it was claimed, and application will be made to have the Act changed to this effect.—Canadian "Carpenter and Builder".

Clay Products in Canada

Being a Review and Forecast of the Progress of the Burned Clay Industry in the Eastern Part of Canada

By J. Keele

Canadian Geological Survey.

THE PRESENT SPELL OF GROWTH and progress in Canada, beginning about ten years ago, found the native clayworking industry inadequate to supply the demand for building material. Consequently, such substitutes as concrete construction, sand-lime and cement brick, were largely used, and a good deal of face-brick and fireproofing were imported from the United States. During the last three or four years several large plants have been erected in the vicinity of Toronto and Montreal for the manufacture of ordinary building brick. The output of these plants is now so large that there is no longer an excuse to use substitutes for brick, either on the score of price, quality, or promptness of delivery.

As competition in this field is bound to be keen, the future existence of the individual industries of this class will depend on their ability to produce the largest percentage of first quality brick per kiln, with the lowest cost of fuel and labor.

The recent great development of the industry in the area between Toronto and Hamilton was due to two conditions;—the district contains an abundance of the best raw materials in Canada for the manufacture of rough clay products, and the two cities and neighboring towns offer a large market for the wares produced from them. The raw material used includes plastic shales from two formations, the Queenston and Lorraine, which are better known to clayworkers by their former names, Medina and Hudson River.

The soft, stoneless clays, of recent origin, are also more extensive in these localities than anywhere else in Ontario, except possibly in the clay belt of the northern portion of the Province.

The Lorraine shale and stoneless brick clays of recent origin occur abundantly within easy reach of the city of Montreal, and these have been utilized freely in recent years in building up that city and its suburbs.

The city of Quebec is supplied with similar materials, conveniently situated. The first plant for the manufacture of shale brick was established near this city a few years ago. The products of this plant have been so satisfactory in every respect that a bright future is assured for it.

The city of Ottawa was dependent, until recently, upon the common-brick made for surface clays in its vicinity. A few years ago an extensive plant was erected at Russel (about 20 miles distant) which utilized the Medina shale outcropping in that neighborhood, and the greater part of the output goes to Ottawa. The Lorraine shales outcrop is in a large area just east of the city limits awaiting future developments; it is not, however, utilized at present.

The Maritime Provinces possess the raw materials suitable for the manufacture of a greater range of clay products than is found in any other portion of Eastern Canada, but the surface clays are almost the only portion of their resources that are at present utilized. The principal brickmaking centers are at St. John, Pugwash and Annapolis, these points being selected on account of the raw materials available, and the facilities for distribution both by land and water. The large plants which were recently erected in these localities use the stoneless surface clays for brickmaking, while the large plants erected in the Provinces of Ontario and Quebec use either of the two shale formations before mentioned.

Owing to their greater compressive strength, density and uniformity of size, the shale brick are preferred for underground work, such as trunk sewers, and for high structures carrying heavy floor loads. The future development of the brick industry then, in the Maritime Provinces will be in the utilization of the plastic shales with which they are bountifully supplied.

As far as the rough clay products industry in rural districts is concerned, there will be little or no change in the future as there has been in the past. The character of the product is fixed by tradition and usage, and by the raw material available at any given locality.

Any changes that are introduced will not affect the color and shape of the product, but will be manifested in improved or more economic method of production, such as the substitution of permanent down-draft kilns for the wasteful temporary scove or clamp kilns now in use.

One thing seems bound to happen, however, in this connection, and that is the extension of the practice of underground drainage for agricultural lands. This is done to a considerable extent already in Southern Ontario, but scarcely at all in Quebec or New Brunswick. No field drain-tile are at present produced in these two provinces, although they have extensive and widespread deposits of stoneless surface clays suitable for the purpose, as well as large regions of land which would be rendered much more productive by underdraining.

The development, therefore, which is likely to occur, is the building of several small plants at various points, to which farmers from the surrounding districts can send their teams for a load of tile whenever required. This seems to be a more satisfactory plan than in having a few extensive tile works at certain centers, from which shipments would have to be made by railroad or barges to the rural districts.

The extensive belt of stoneless glacial clays in Northern Ontario and Quebec contains material which is very suitable for the manufacture of common-brick and drain-tile. These localities are situated too far from present markets to allow of them being worked for this purpose.

Owing to the abundance of wood in this region, brick and tile should be produced cheaply. A cheap freight rate to southern points might be secured by utilizing re-

turn empty coal cars from the divisional points on the Transcontinental Railway, which traverses the clay belt.

FACE-BRICK

The discussion so far has had reference to common-brick made by either the soft-mud, or dry-pressed process. So much poor dry-pressed brick has been made in Eastern Canada in late years, that I offer no apology for placing such in the common class. They can be bought at common prices also.

Some of the makers do keep up a high standard of excellence as regards density, finish and color for their dry-pressed product, and these always find a ready sale at prices considerably above that of the ordinary building brick.

The best practitioners in architecture, however, no longer regard the dry-pressed process as the high-water-mark in brick production. The smooth surfaces and tiresome uniformity of color do not lend themselves to effective treatment, especially for residence work; but it is probable that their use will be continued for business buildings.

Roughness in texture and variety of color are now regarded as most desirable qualities for face-brick. The roughness is produced by a simple device attached to the brick machine, and variety of color is obtained by "flashing" during the burning process. In some localities in the United States kilns of this kind of brick are turned out which rival Turkish rugs in color and texture.

These brick are made from shales, the cost of production being practically the same as that of the ordinary wire-cut, but the profits are much greater.

A few of the leading brick plants in Ontario and Quebec have taken up the manufacture of rough-faced brick in a half-hearted manner as a recognition to a passing fad. These firms are essentially dry-pressed face-brick makers; but it is significant to note that by overburning and flashing their dry-process wares they are catering to the desire for roughness of finish and diversity of color.

Of the twenty plants using either the Queenston or Lorraine shales in the triangular area included between Toronto, Hamilton and Credit Forks, twelve are wholly dry-press makers, while eight are wire-cut or mixed plants. Three of the latter make a small quantity of rough-texture face-brick. One of these, the Ontario Government plant at Mimico, produces an article equally as good as most of the imported material. There appears to be an opportunity here for an enterprising brickmaker to produce a distinctive article which will bring him out of the common class into the region of greater profit.

One of the plants at Laprairie, near Montreal, uses the Lorraine shale to good effect in producing a rough-texture face-brick for the Montreal market.

The Lorraine and Levis shales near the City of Quebec can be used to produce richer effects than those of the western shales.

The carboniferous shales in New Brunswick and Nova Scotia contain endless possibilities for this class of ware. That they have been unused up to the present, denotes a singular lack of appreciation for the beauty of burned clay ware, and an unrivaled building material, in the cities of these Provinces.

FIREPROOFING

Hollow blocks of various shapes, made of burned clay, are used largely as the fireproof clothing for steel frames in modern high structures—hence the trade name of fireproofing for this class of ware. The use of hollow blocks, however, is not confined to covering steel structures; they are now used extensively as a building material for the construction of exterior walls and partitions in factories, silos, dwellings and storehouses.

There are only four factories manufacturing this class of ware in Eastern Canada, and only one of these is devoted solely to this product. Three of these use surface clay, and one located in Toronto uses Lorraine shale.

The surface clay is not a very satisfactory material for fireproofing, the shales being better, as they produce a harder, stronger ware, which also stands transportation without undue loss from breakage.

The supply of homemade fireproofing is inadequate in quality and quantity.

Several brick plants already located on shales in any of the provinces might profitably take up this branch of the industry. Almost any of the plastic shales between Lake Huron and the Atlantic are suitable for the purpose. The use of hollow blocks made from burned clay is always increasing, and will continue to do so as long as building activity keeps up.

PAVING BRICK

Vitrifying clays or shales suitable for the manufacture of this class of clay products are comparatively rare in Eastern Canada. Nearly all of the paving brick used in Toronto and other localities in Southwestern Ontario are imported from the United States. A small quantity of paving brick is made from the Lorraine shale at West Toronto. While these may be suitable for sidewalks or residential streets, their life is too short under the ordinary city traffic.

Certain shale deposits of the Levis and Sillery formations, which are probably suitable for the manufacture of paving brick, were discovered by the writer about two years ago. The Citadel Brick Company of Quebec is experimenting with these shales at present, so that paving brick may become one of its principal products in the future.

It is quite possible that paving blocks might be made from the Lorraine shales near Toronto or Montreal if a certain percentage of imported fire clay were added, in order to prolong the vitrification range of the shale and toughen the product. This is another opportunity for brickmakers in Ontario to get out of the common-brick class.

The carboniferous formation in the coal mining districts of New Brunswick and Nova Scotia contain shale beds suitable for the manufacture of vitrified wares. No attempt has yet been made to develop this industry, the principal reason being that a market does not exist for them at that end of the country.

SEWER-PIPE

Three plants are employed all the year round in the manufacture of sewer-pipe in Ontario. The raw material used is either the soft weathered top of the Queenston (Medina) shale or a transported clay washed from the same material, which occurs at Waterdown and vicinity, near Hamilton. This clay burns to a good strong red body, but does not take a very good salt glaze. It is the only material we know of in the province which is suitable for the purpose.

These pipe are used extensively in Southern Ontario, notwithstanding the competition of the brightly glazed pipe made from fire clay or semi-refractory clay in Ohio or Missouri. The most extensive sewer-pipe plant in the Dominion is situated at St. John, in the Province of Quebec. The local clay is used, but a liberal stiffening of fire clay imported from New Jersey is added to it.

(*Concluded in the April 20 issue.*)



A Corner in the Clay Products Exposition, Recently Held in Newark, N. J. This Exposition Had No Commercial Object, Save That of Developing the Burned Clay Industry Within the State's Borders

Jersey's Historic Pottery

Some Interesting Facts Connected With Colonial Clayworkers' Brought to Light by Recent Exhibition in Newark, N, J.

By Allen E. Beals

THERE HAS JUST CLOSED, in the city of Newark, N. J., a novel clay products exposition. Names prominent in the pottery world, in the brick and tile manufacturing field, and in many other lines of clayworking, were included among the exhibitors, yet the exposition had no commercial purpose, save that of developing the industry within the borders of the state.

It was distinctly a New Jersey exhibition of products made in New Jersey. It was historical, in that it showed the pottery and brick and tile as they were produced many years ago, yet educational, since it also showed the best examples of today's output—which is history-making, since it points to an advance in finish, and in method of manufacture.

It covered the entire state, the various larger clayworking centers making more comprehensive showings than those of the isolated plants, yet in each case the exhibit was creditable alike to the state and to the industry.

The exhibition was given on the third and fourth floors of the Public Library in Newark from February 1 to March 14, and was open freely to the public. The historical collection embodied principally art pottery and table ware; tile, enamel-brick and special clayware had a prominent place in the exhibition, especially architectural terra-cotta.

In the historical departments there are several missing links of the narrative of progress in the New Jersey clay industry. Who, for instance, was John Mann, of Rahway, whose name is imprinted on the black glaze teapot? Was he a potter of Rahway, or a person for whom the teapot was made? There would seem to be little doubt but that the words are a potter's trade-mark.

There were, for example, in the collection several pieces of brown earthenware from the Caldwell pottery, which was working about 1840 and was then owned by Captain Thomas Denham Gould. The museum is anxious to secure more information than it now possesses, regarding the length of time that this pottery was in operation, and who succeeded Captain Gould, and any other information that pottery historians or collectors may have.

OTHER THINGS THE MUSEUM WANTS TO KNOW

As has been said, there are many gaps and many "missing links" in the history of New Jersey's pottery trade. These gaps may be filled by those who have made a study of pottery, and any information that they may send to the Newark Museum Association will be appreciated. Some of the points that the museum would like to clear up are:

Who was B. Lent, of Caldwell? There is, in the museum collection, a large, earthenware jar with an impression mark of that name. Was he a successor or a predecessor of Captain Gould, or was he a competitor?

Among the collection were four small pieces representing a lion, a rooster, etc., from a pottery in Bordentown. These

were in brown and mottled glazed earthenware and seem to date from about 1850. Details about this pottery are also sought, for all that has been learned so far is that there was a man at this pottery named Thorn, but whether he was one of the firm or an employe, is not known.

Then there was some pottery turned out at Jersey City by a man named Gerardine. It is known that, in 1854 there



Two of the Exhibits of "Jersey Made" Tile

was a Louis Gerardine, who was well known as a china-decorator. Was he also a manufacturing potter?

It also seems that there was a pottery, in Newark, sometime before the war, that did business under the name of the "Union Pottery." It is said that it was located at the corner of First Avenue and Third Street and that it went out of business but a few years since. There are several crocks made by this concern, in the museum collection, all marked "Union Pottery" but they bear three firm names—C. Haidel & Company, Haidel & Zipf and J. Zip, Prop.

Among the collections of terra-cotta were exhibitions from Ritger's Excelsior Pottery Company of Newark, the South Amboy Terra Cotta Company, which offered a plaque in high relief of the head of James McNeil Whistler, similar to that on the Keppel Building in New York City. Other architectural terra-cotta firms exhibiting were the New Jersey Terra Cotta Company and the Atlantic Terra Cotta Company.

Gas logs made an interesting showing as represented by a local firm, that of Strait & Richards, of Newark. Crucibles, refractory fire-brick, sanitary and electric ware are also represented.

The pottery industry, which has reached such magnitude that it today ranks as second among New Jersey industries, dates back in this State to 1685, when Dr. Daniel Coxe, of London, through his agent, John Tatham, erected a pottery near Burlington.

Of course, examples of the ware of so long ago are not now to be met with. In fact, even with manufactures of later date the finer kinds would naturally go first, so that our earliest examples today are often of rougher ware that has better stood the long usage.

A stoneware pottery was started at Elizabeth, N. J., about 1816 and at a later date was operated by a Mr. Pruden, who made yellow and Rockingham wares. The factory is now owned by the Standard Sanitary Pottery Company.

The Jersey Porcelain and Earthenware Company was organized at Jersey City in 1825. In the following year its products won a silver medal at the Franklin Institute, Philadelphia, as "the best china from American materials." From those beginnings Jersey City became practically the cradle of New Jersey pottery manufacture. Several of the museum exhibits come from this source.

About 1831 a manufactory of flint stoneware was established at New Brunswick. In 1828 a pottery was opened at South Amboy, and the year 1852 became memorable for the starting of the first pottery in Trenton, now the greatest pottery city in America. So great is its output and so varied



Brick and Hollow Tile "Made in the State of New Jersey"

its ware, that it is called the Staffordshire of America—no mean compliment to its potters.

The illustrations that accompany this article were loaned by the Newark Museum Association, which, as has been mentioned, is taking a great interest in pottery, not only its past history, but in its future development.

Potters Should Read This Book.

The Department of the Interior, Bureau of Mines, has published a pamphlet which is known as Technical Paper No. 99; the title is "Probable Effect of the War in Europe on the Ceramic Industries of the United States," and it is written by A. S. Watts of the Ohio State University.

This pamphlet can be obtained, free of charge, by writing to the Department of the Interior, Bureau of Mines, Washington, D. C. A limited number of copies makes up the first edition, and after that edition is exhausted, application will have to be made to the Superintendent of Public Documents at the Government Printing Office at Washington, D. C., and he will supply the same pamphlet for five cents per copy.

Who Makes Filter Stones?

One of "Brick and Clay Record's" correspondents has written, asking for the name and address of any firm who manufactures or prepares for market, so-called "filter stones" that are used in stoneware filter jars. Any information which may be sent to this office will be gratefully received by the management and passed on to our correspondent.

Burned Clay vs. Lumber

A Forecast of the Evidence and Defense in a Case that will Shortly Come Before the Court of Public Opinion

THIS IS THE SECOND in a series of papers, outlining the arguments against brick construction that may be used by the lumber interests in the "educational" campaign that they have proposed, and which is to cost a million dollars in five years. It is well that the brickmaker is stirred from the complacent attitude of the past few years. He is losing to hollow tile and to concrete, on all large work. His road to increase lies through residence construction. See what arguments he has to warrant his believing he is going to gain some of the eighty per cent that now goes in frame.

By Gardner Read and E. Winfield Day

THERE IS, of course, only one "best" material for each purpose. At the same time, a goodly number of other materials may exist that have claims to recognition; these claims, viewed from a standpoint prejudiced by personal interest, seem very sound.

While a manufacturer of brick or of hollow clay building tile may be certain that his material is "best" for residential construction, the man who owns a saw-mill or a lumber yard may have seemingly sound reasons why his product or stock is "best" for the same purpose. The consumer—that is, the builder—acts as judge and jury.

The mere fact that the clay products manufacturer thinks well of the goods he makes is no more in his favor, nor in the favor of his product, than the fact that the lumber man thinks well of wood, makes wood the logical (and therefore "best") constructive material.

The man who is about to buy wants *facts*, or, to be more exact, information. Now this information may be made up of facts, or it may be made up of *claims*. How is the prospective builder to separate the wheat from the chaff?

In the first place, it must be understood that both the manufacturer of clay products and the lumber man will appeal to a prejudiced mind. Unfortunately, for the clay products manufacturer, the prejudice is *for lumber and against brick and hollow tile*.

This fact is clearly shown in the percentage of frame residence construction that goes on, year after year, despite the activities of fire-prevention societies, the dissemination of information as to fire-losses, despite the increased premiums charged by fire-insurance companies on frame dwellings, and despite the publicity given great calamities, like that which came to Salem, Mass.

This prejudice, in favor of frame, and against a safer (from a firehazard standpoint) material, is due to several causes; the first of these is *initial cost*.

INITIAL COST

Some brick manufacturers have claimed that certain types of brick houses cannot be reproduced in frame for less than 90 per cent of the cost in brick—which is another way of saying that a brick house costs only 10 to 12 per cent more than the same house in frame. Whether these manufacturers have selected a type that is particularly cheap in brick (and relatively expensive in frame) is a question. It is natural to suppose that the type selected was not designed along lines that would make a showing prejudicial to brick.

The educational campaign of lumber will, beyond question, show types of wooden houses that cannot be reproduced in brick for less than 33⅓ per cent additional to the cost in frame.

The judge and jury—or in other words, the prospective builder—will see as much truth in one, as in the other, for *there will be as much truth in the one, as in the other.*

The nearness to one cost, of dwellings constructed of frame and those of brick, is accidental. It cannot be ascribed to the "ever increasing cost of lumber"—which is supposed to have doubled and trebled itself in the past ten years. Nor can it be ascribed to the lessened cost of masonry—for that has not been lowered—rather the reverse.

It comes, instead, from the changes that have taken place in domestic architecture, and while those changes were not accidental, they have resulted in giving brick construction an advantage it did not possess some years ago. These changes made for the square type of dwelling, and did away with the "towers," bay-windows and projections of by-gone days. And the square type of house lends itself to masonry construction; the "towers" and "bays" and "ginger-bread" of twenty or thirty years ago did not.

Somewhere between the severe English type of dwelling and the type that has still some similarity to the fanciful outlines that marked the "big" houses of our boyhood days, lies the safe, sane, popular type that will appeal to the great majority of home builders.

The discovery of this type, and the building of it—in frame and in brick—will demonstrate whether brick construction is, or is not, sufficiently low in its initial cost, to offset the popular prejudice on that point.

WOODEN HOUSES ATTRACTIVE

The lumber men have but a short way to go, to produce something very convincing along this line. For years and years, men have built frame houses with a view to producing good effects for very little money. *And the element of beauty has not been altogether sacrificed to economy.*

So the manufacturers of burned clay must be prepared to meet and compete with a well designed, well printed book, giving pictures of frame houses that have been built—not simply designed and estimated—houses that appeal to the good taste of hundreds of thousands of prospective homebuilders, and *quoting actual costs.* If the paint manufacturers co-operate with the lumber men (and there is every reason to believe that they will) the book will be in color. *And the chances are that it will offer a premium to any brick manufacturer who will reproduce any of the houses in brick for an advance of ten per cent over the actual cost of construction in frame, as given in the book.*

There will be, it is true, a "nigger in the wood-pile." The dusky-hued gentleman, in this case, will be the fact that the lumber men who compile the book will scarcely waste good printers' ink on house-types that could be readily translated into brick.

One way of meeting that sort of competition is to prepare something of the same sort—but with a brick flavor. *While the low initial cost of brick construction is a comparatively new discovery,* there must be and are, good artistic types of brick dwellings that have been erected, and upon which accurate cost data has been kept.

NO HELP FROM THE PAINT MAN

And, although the paint manufacturer cannot be expected to contribute, the fact that color has so much to do with the desirability of brick construction and that face-brick of desirable color brings a premium over that which is less in demand, should point the way to the publication of this book in the three or four color process.

To repeat what has already been said, the question of *initial cost* is of first importance in the mind of the man who is about to build. He has a certain sum to spend, and wants to spend it to the best advantage. He has held the opinion that brick construction is beyond his means, and, figuring it to be an extravagance, has dismissed it from his calculations.

Of what avail, then, are the supplementary arguments of eventual economy, of safety from fire and other "stock" brick arguments? If the homebuilder looks upon these points as desirable, but impossible, they are very apt to fall upon unwilling ears.

The doctrine of "Not How Cheap, But How Good," while sound, is not always convincing. If it were so, we would all wear "made-to-order" clothes.

The lumber men are too well versed in the art of salesmanship to waste time on arguments that lead nowhere. They will play the alleged *low initial cost of building in frame* as far as they can.

In order to do this, they will employ the best mediums of advertising they can afford. The advertisements will offer, probably free of charge, a book of "designs." This book will be the one about which we have written.

To offset this, the manufacturers of brick will have to buy similar advertising space, and offer a similar book—the difference being that the book issued by the brick men will devote some of its pages to the arguments which go to prove that the *slightly increased cost of building in brick is warranted by the economy that comes with brick construction.*

The collection of the data for this book—the choice of designs and the wording of the argument, is a work that should be done by men trained to the minute in the preparation of trade literature. It will mean the expenditure of a very considerable sum of money. It will entail the advice of more than one architect. But above all, it should be the exploiting of houses that *have been built,* so that the cost figures will be actual—not theoretical.

WHAT CONSTITUTES A BRICK HOUSE?

There is a vast difference of opinion as to what is meant by a "brick" house. To be consistent, it should at least be a shell of burned clay, and this would mean a tile roof surmounting a series of brick or hollow tile exterior walls.

A "brick" house, with a shingle roof, is almost as much exposed to fires that start outside of its walls, as is a house that is entirely frame.

So, if any great stress is to be laid upon the saying that a "brick house is safe from fire," the cost of the heavier roof construction necessitated by the tile roof must be considered, and this point will be made much of, in the campaign of the lumber men.

When it comes to considering the "safety from fire" of a house constructed of brick or hollow tile exterior walls, and with a burned clay tile roof, but with wooden floor beams, wooden interior partitions, wooden doors and stairs, the lumber men and brick men both have a most delicate subject to handle.

Insurance records tell us that the majority of fires in dwelling houses come from causes that are inside of the exterior walls—overheated flues, defective insulation, exposed gas jets and the like Here, every argument advanced by the lumber men is two-edged, injuring their cause as much as it advances it. And, since the brick men may wish to make a strong stand on the safety-from-fire factor of their material, it might be well for them to find allies in the men who make plaster-board and other fire-retardant materials for inside construction, and *so evolve the ideal residence construction,* which will be sufficiently low in its initial cost to attract the attention of home builders of moderate means, and yet so logical, from a fire-prevention standpoint, as to make their "safety first" arguments invulnerable.

ANOTHER PREJUDICE AGAINST BRICK

It must be remembered that the vast majority of homebuilders *believe* that brick construction is too costly for them to consider. As long as they can remember, the men of their own class, who built houses or bought houses, built in frame or bought frame. The idea of building in brick brings to them an idea of one or two things; one of these is the possession of wealth or a very considerable income—the other is the possession of a rather large amount of what is commonly known as "nerve"—or, at times "bluff."

In their home town, the retired banker built in brick. So also did the trolley magnate. And so, alas, did the man who "milked" the town for several thousand dollars by various stock-manipulating schemes.

So, having overcome the first prejudice, which is *initial cost,* the brick manufacturer will have to start his supplementary arguments with good, solid statements that will convince the homebuilder that it is an *extravagance to build in frame* and that brick construction is sensible, safe and sane.

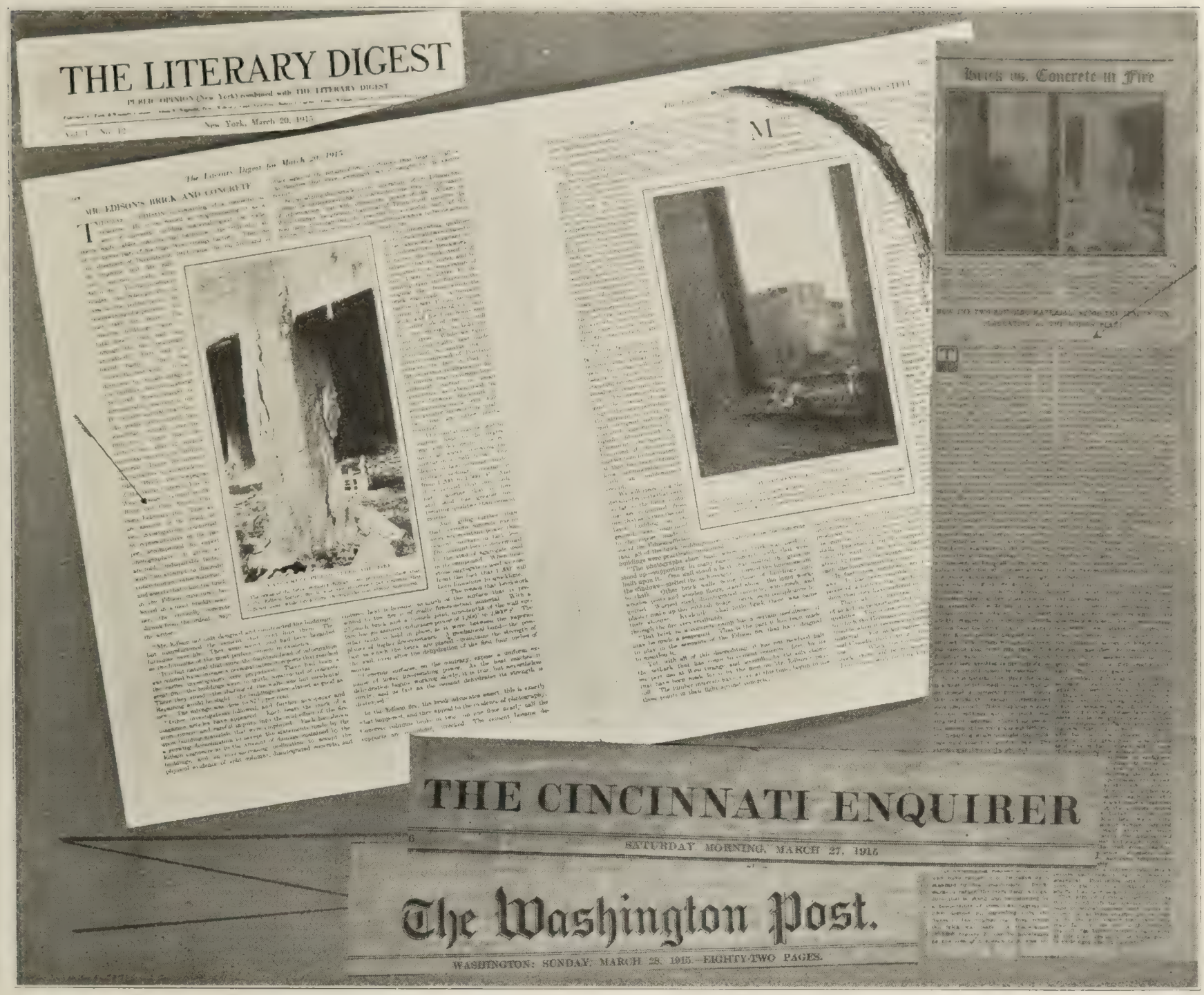
At the present time, the statement that "every man wants a brick house if he can get one," is a false premise. It is just one more way that a brick man has, of saying that it isn't necessary to do very much, to convince the whole world that brick is the right thing. When a man has been brought up to frame and considers that the use of brick would be immodest, from a financial standpoint—he *does not want* a brick house—indeed, he is very much against one.

Brick manufacturers must be ready to meet that argument, which will be dressed up and made very attractive by the lumber men. "Build the way your father built" is not such a bad slogan. And little will be said of the excellent quality of the lumber than "Father" used and the practical impossibility of getting that sort of lumber today. The house that, "Father" built is standing—looks solid and good—it has been repainted and repaired, again, and again—but "Father" paid the repair bills, and their amount is forgotten.

So the house stands—the slogan stands, and it all fits in well with the lumber men's talk—why build better? The inference is—"why pretend to know more than your good old dad?"

So it will be seen that, in this case that is to come before the "court of public opinion" it will be necessary for the men who make and sell burned clay to be represented by clever counsel, able to put well prepared arguments before the judge and jury.

More of the case for—and against—lumber, will be given in the next article of this series, which will be published in a later issue.



A SAMPLE OF WHAT CAN BE DONE IN THE WAY OF PUBLICITY FOR BRICK

"Brick and Clay Record's" Story of the Part that Brick Played in the Edison Concrete Fire Formed the Bulk of a Page and a Half in "The Literary Digest," of March 20. It was Reprinted, also, in the Cincinnati (Ohio) "Enquirer" and the Washington (D. C.) "Post." The Combined Circulation of these Three Periodicals is 611,000.

One of Thousands

As an argument for the wearing quality of lumber you are asked to consider the Washington home at Mt. Vernon and the Hale homestead at Newburyport, Mass. For sentimental reasons these two wooden houses have been preserved by constant repair and vigilance.

But where are the tens of thousands of other wooden houses built at the same time as these two?

Either they have gone the way of nearly all temporary construction and have burned down or decayed into useless wrecks. The Hale house is 250 years old. If it has been repainted as often as once in five years there has been spent in this one item of upkeep enough to build a house of masonry.

The performance of a frame building erected 250 years ago is no criterion of what a present day frame building will do. The Hale house, for instance, was built of selected native wood, hand-hewn. Such timber today would be prohibitive in price. Stone, brick, tile or cement and steel would be cheap in comparison.

Do you believe that any of the frame houses being erected today will be held up as examples 250 years from now? They haven't as much chance as "a bow-legged girl in the town where she was raised." When twenty-five years old they will cost so much for upkeep that only a rich man could afford to own one. Lumber has steadily advanced in price and poorer qualities are accepted for general use.

During the same period the permanent materials have grown better and cheaper. When the Hale and Washington homes were built the only brick used in America was brought over from Europe. The first local product was hand-made and sun-dried and usually was laid up with mud, instead of cement, as today.

The various fire resistive materials available for home building today make it possible to build a safe and beautiful house as cheaply as you can build with good grades of lumber. Don't compare permanent construction with the flimsy frame—the "ready-made," can't-heat-in-winter "jerry builder" specimens. There is no comparison.

By building your house to resist fire you make it enduring against all other elements as well. It will be easy to warm in winter; always cool in hot weather; more beautiful and substantial in appearance and more comfortable to live in.

The permanent house is a good investment because it does not require repainting and repairs every few years. The flimsy house calls for bigger repair bills every year; is always in danger of catching fire and is a difficult thing to sell after it has been built a few years.

It is real economy to build with materials that will not burn or decay.—Extract from a card issued by the Society Advocating Fire Elimination.

Reaching the Farmer

The Ninth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XXI

Following Up the Prospects

ADVERTISING is the advance agent of the salesman. It singles out and makes known to him those who are most interested in his goods and what he has to say about them. It tells him just where he can spend his time to the best advantage and bring the largest possible returns. It must not, however, be expected to sell goods in exactly the same manner as a clerk behind a counter.

A story is told of a certain manufacturer who had developed his business from a very small beginning to a point where his investment ran into six figures; the demand for his product kept a good sized factory busy. An advertising man called on him one day and sought to show him how he could greatly increase his sales and material prosperity by advertising his product. The proposition looked good to the manufacturer, so he agreed upon the amount of money he was willing to spend for publicity and told the advertising man to go ahead and start a campaign.

Very soon letters began to pour in from every part of the country in answer to the advertisements. With a radiant countenance, the manufacturer plunged into the mass of correspondence in an eager search for orders. He read letter after letter which asked for a certain booklet which the ad. said was to be "had for the asking," but in most cases, the writer of the letter went no further. With a mingled air of disgust and bitter disappointment, the man who was paying for the advertisements, piled the letters on a nearby table, where every mail added to the collection.

Anxious to know how his client was progressing with his new sales campaign, the advertising man called at his office, opening the conversation by asking, "Well, how's business; got many orders yet?"

"Nope! Not any more than usual, and what's more, I think your advertising scheme is a *fake!*"

The advertising man, taken completely by surprise, began to ask some questions, among the first being, "Why, haven't you received any replies at all to your ads.?"

"Yes, there they are." The manufacturer waved his hand toward a table which was piled high with mail. "What good is that 'stuff?' Most of them ask for that little booklet we got out, but 'durned' few ask for prices."

The mystery was solved. The manufacturer had spent a large sum of money in newspaper and magazine space, but his enthusiasm ceased just when it should have been but under way. *He failed to see that these letters he was getting, asking for a booklet, pointed out the exact locations where his salesmen should put in the greater part of their energy.* The fact that these letters were actual "tips" for sales had not impressed itself upon his mental process.

In the three preceding articles, we analyzed, in a general way, the market for clay products on the farm. We studied rural conditions and their relation to our product. From these investigations we arrived at certain conclusions—just how we should approach our prospective farmer customer in the wording of our advertisements to bring the largest possible number of inquiries. Having received these inquiries, what are we to do with them to realize maximum returns from our investment in advertising space?

CHAPTER XXII

The Dealer, an Important Link in the Chain

For those manufacturers who use dealers in the distribution of their product, the "follow-up"—which means the cultivation of prospects and the securing of their business—is a separate campaign in itself. Many advertisers have neglected this important part of their selling organization, to their sorrow.

You will remember that the subject of improving dealer distribution has already been discussed in a previous article. The thought that the dealer should be looked upon in the light of a salesman—a personal representative—has been emphasized. In determining just what part the dealer should play in an extensive advertising campaign for clay products on the farm, such as would be conducted by a promotion bureau, this thought will help considerably, for you already have a system whereby you work with your salesmen to secure orders, and it should not be very difficult to apply this same system to the handling of dealers.

In the first place, when a farmer reads the ad. of the promotion bureau in a farm journal or elsewhere, he immediately writes for the booklet offered in the advertisement and said to be able to give him more information on a subject in which he has already shown an interest. On receipt of his letter, the bureau mails him the booklet and then forwards his name, together with any additional information which may prove helpful, to the plants and dealers who subscribe to the fund which supports the publicity that brought out the inquiry.

It has been said that pictures have a great attraction for the average reader. It is a fact that, to the mind which has not been trained to appreciate a "word picture," the photograph is of unfailing interest. The book which the bureau would send to the farmer in answer to his inquiry should deal in a general way with its subject and should be well illustrated. Its object is to create a deeper interest on the part of the farmer in the use of clay products on the farm.

It does not, however, follow that a continued use of pictures and generalities will bring any large number of orders. While illustrations showing what other farmers have done with a thorough system of drainage, a burned clay silo, a barn, chicken or hog house, are interesting and often convincing, there is a large class of farmers who will want to know the why and wherefore of these results. This is particularly true of drainage and drain tile. It is the *thinking farmer* whom the clay products manufacturer

will find to be his best customer, and he must be given a lot to read and think about.

When the manufacturer, who is a member of the bureau, receives the name of a farmer who is a prospect, he can then send his particular booklet, which might well go further into the subject in which the farmer is interested, and perhaps urge him to buy the manufacturer's particular block or tile. In this way, the bureau, while helping the manufacturer to get more prospective customers, would in a way, assist in the sale of his own trade-marked product.

The next step is to have someone call upon this farmer to ascertain what kind of a prospect he is—that is, whether he is already in the market for burned clay or building materials, or if he will be very soon; if he is simply interested in this material with the thought that, should it prove to be something that will improve his farm, he will want it, he may be made an immediate buyer by proper salesmanship. This may be the work of either the salesman or the dealer—preferably the latter, since the dealer knows, or should know, every farmer in his territory.

The trouble about many dealers, however, is that, once having called upon a farmer and finding that he will not be in the market for several months, they have a way of dropping the matter and forgetting all about the prospect. Any system or plan whereby the dealer can be led to keep in touch with this class of prospects would certainly be of great benefit to the industry.

There are some cases—many of them—where progressive dealers have developed follow-up systems that put the loosely constructed sales-organizations of some manufacturers to shame. This kind of dealer helps the manufacturer whose line he carries. If it were not for him, and others like him, many "old timers" in the clay products industry would be down and out.

But this type of dealer, unfortunately, is not the rule. For every one that is progressive enough to apply modern merchandising methods to the sale of the materials he carries, there are two dealers who are just the opposite. These are briefly summed up as being "order-takers" in place of being "order-makers." They are the weak spots in the manufacturers' selling plan, for they tie up territory without working it. These men lose money for the manufacturer today, and if not strengthened, they will be the cause of a still greater loss, by their failure to follow up prospects obtained through the bureau advertising.

Where the dealer can be persuaded to map out his own follow-up system, it should always be done, as he is more apt to keep in operation a plan of his own than one which has been manufactured for him. However, should the dealer not be able to do this through the lack of ability or because of his ignorance of what an effective follow-up system really is, the manufacturer should work with him to formulate a method whereby the dealer can realize the largest number of orders from the prospects which are obtained through the bureau advertising.

The practice which is prevalent among many manufacturers of expressing large quantities of follow-up literature to their dealers, with the request that they—the dealers—mail it or otherwise get it to the prospective customers in that particular dealer's territory, is usually a waste of good money. Nine chances out of ten, the dealer will write back to the manufacturer and ask who is to pay the postage, or, assuming that he is to be the "goat," will deposit the literature in its final resting place—which is usually the waste-paper basket.

Good follow-up literature is essential for maximum returns from advertising space, but in order to be effective it must be handled properly and sent to the prospect in the proper order and at the right time. For the manufacturer whose method of distribution includes dealers, the largest returns from a follow-up system may be realized if that system be handled by the dealer, and if the dealer is convinced that he will profit by keeping the follow-ups at work.

Just what makes an effective follow-up system is problematical. Local conditions and the product enter largely into its make-up; if neither the manufacturer nor the dealer has a knowledge or experience in this subject, it is best to call in an advertising counsellor, who will cover the expense of his services several times over by producing a system and literature that will be much more apt to produce results than a home-made affair.

CHAPTER XXIII

Publicity and the Dealer Problem

There are some manufacturers who will say that the thoughts contained in the foregoing paragraphs are impractical—that they cannot apply them to the handling of the dealers with whom they are doing business. So far, we have considered the dealer who is progressive and who needs but very litle help from the manufacturer—the type of dealer who could show the manufacturer places where he could improve his own organization. And we have considered the dealer, who, while he does not now have an adequate follow-up system and may not be able to plan one, *is willing* to become a more valuable sales force by adopting one of his own creation or that of the manufacturer. There is just one type of dealer left to be considered, he who is neither progressive nor willing to become progressive.

In many cases, in order to secure representation in a certain territory, the manufacturer of clay products has had to pick out what looked to him to be the best man in a town. Where the dealer was not over-anxious to take on this line, the "selling" in reality became a "begging," the manufacturer being put in the position of one who was receiving a favor at the hands of the dealer. Where the manufacturer has been successful under these circumstances, and has placed his agency with a dealer of this type, he has a great problem in how to keep this dealer working to sell the line.

The whole problem narrows down to the relative importance of the dealer and the manufacturer, and here again is where advertising will help the manufacturer who is a member of the bureau. The securing of a much larger number of prospects through advertising will soon have its effect on the dealer. It will not take him long to see just how he will be benefited. By increasing sales at a price that can more easily be maintained through an increased demand, it will soon put new life into him, and, if he is the right man to represent you in his town or territory, he will soon be pushing as hard for your product as your salesmen.

Should he not prove to be the best man or not be willing to co-operate with the manufacturer by installing the proper follow-up system and otherwise working with the manufacturer to increase the sale of his product, it should not be a difficult matter to take the agency from him and place it with the man who will measure up to these requirements. This thought may be a bit revolutionary in the marketing of burned clay wares as carried on at the present time, but it is nevertheless a high plane to which

the clayworker should aspire and which he can reach through extended publicity.

The dealer question has not been an easy one for the manufacturer of burned clay to solve. The past has been marked by dealers who are of the slot-machine variety. They have sat around and waited for the farmer to come along and buy a wagon load of clay wares from them, for which the farmer forced into their hands perfectly good money. Some dealers, however, have not stopped at this. They have been a constant thorn in the side of the manufacturer by their maneuvers to get lower prices from him and thus increase their profit, instead of getting out and selling more goods.

These evils can be overcome by a systematic campaign of advertising and selling, whereby the dealer becomes an important link in the chain which operates to market an increasing tonnage of clay products on the farm. Then, instead of being under obligation to the dealer who does him an undoubted favor (from the dealer's standpoint) in accepting the agency for his goods, the manufacturer will be the one who will bestow the favor, for the prospect of handling a profitable local business which is being constantly stimulated by the manufacturers' advertising, will be sufficient to attract and keep the best dealers in every town.

In the next article, which will be the final one of this series, we shall sum up in a general way the advantages of a promotion bureau, and what such an organization would mean for the extended use of burned clay on the farm.

Iowa Drainage Meeting Has Large and Interested Attendance

An unusually large attendance, and an interest and enthusiasm that were phenomenal, marked the annual meeting of the Iowa State Drainage Association, held at Webster City, Ia., February 25 and 26. In fact, it has been announced by the Secretary—M. F. P. Costelloe, of Ames, Ia.,—to be the most successful meeting ever held by the association.

That Iowa is the state which is foremost in drainage matters, is hardly to be doubted. It claims as its share about one-third the total production of drain tile in the United States, and since the greater part of this production is consumed within its borders, it is natural to look for an interest in drainage on the part of the Hawkeye State. That this interest, however, is assuming large proportions, augurs well for the man, not only in Iowa, but in other states, as well, who has capital invested in a plant and some kilns, and who has a clay that will make a good drain tile.

The program of the convention was unusual in merit and touched on several phases of the drainage problem, including farm drainage and its advantages, the difficulties encountered by the drainage contractor and engineer, the sanitary aspects of community drainage and the legal questions of both town and country drainage. Spirited discussions followed the reading of each paper, and as is usual, this part of the program proved most beneficial.

The morning session of February 25 was opened with a paper by C. B. Platt, of Van Meter, Ia., on "Platting and Recording Tile Drainage Systems," being followed by F. O. Nelson on "Planning and Building Farm Drainage Systems," the discussion on which was continued in the afternoon session, after the address of welcome from Mayor Valentine of Webster City. "Vertical Drainage," by Prof. John T. Stewart, St. Paul, Minn.; "Soil Moisture, Underdrainage and Crop Production." by W. J. Schlick, Ames, Ia.; "Drainage Improvements and Their Relation to Sanitary Conditions," by Lafayette Higgins, Des Moines, Ia., and a paper on "Some Sanitary Benefits Resulting from Drainage," by Wm. Grant, Lincoln, Neb., closed the afternoon session in the convention hall. The party then boarded a special coach furnished by the Northwestern Railroad and made an inspection trip to the plant of the National Sewer Pipe Company, on the outskirts of Webster City.

"Problems of the Drainage Contractor," by H. B. Whitney of Des Moines, Ia.; "Legal Problems of Drainage Development in Iowa," by T. P. Harrington, of Algona, Ia.; "Methods of Apportioning the Cost of Constructing Drainage Improvements," by Guy R. Campbell, of Emmetsburg, Ia., and "Methods of Payment for the Engineers of the State," by A. G. Baker, of Hampton, Ia., were among the papers of interest that were read during the sessions of the closing day.

At the close of the eleventh annual meeting of the Iowa State Drainage Association, it was conceded by all present that the convention was the most enthusiastic ever held by that organization. Ten years ago there were thirty present at the convention. The next year, the attendance was doubled, and it has been growing with each passing year.

One of the most notable features of the gathering was the presence of a large number of farmers and land owners who would be directly benefited by more extended and thorough drainage. Modern methods of tilling the soil are bringing the advantages of drainage to the front, and with the growing demand for efficiency on the farm, the day is not far distant when both drain tile and the man who makes it will come into their own.

Wisconsin's Kaolin Deposits Create Interest

The supply of domestic kaolin is becoming more and more of interest with each passing day. A new deposit of this material has been discovered on the F. C. Suiter farm at North Bend, twenty miles north of La Crosse, Wis. Tests of the clay are now being made by a government geologist at Ames, Iowa.

Dr. Suiter has known of the existence of the deposit a number of years, in fact he exhibited some of the clay at the St. Louis exposition, where it was adjudged of high commercial value. On account of poor shipping facilities, the owner has been unable to put the clay on the market at a profit. Firms in Chicago have offered $15.00 a ton for the kaolin, the mark set by the government geological survey.

According to Dr. Suiter the deposit is one of three in Wisconsin, one of the other two fields being nearly exhausted. The other deposit is at Hersey.

The field on the Suiter farm is approximately twenty acres in extent and has an average depth, it is thought, of about thirty feet.

Another "Boost" for Clay Products

"Why are children so much worse than they used to be?"

"I attribute it to the improved ideas in residence building."

"How so?"

"Shingles are scarce, aand you can't spank a boy with a roofing tile."

IN 1913

The value of building operations, in 88 cities was

$800, 353, 956

and the value of property destroyed by fire was

204, 000, 000

of which 40% at least, can be considered as damage to buildings.

So you are burning up one-tenth of what you build each year - creating a tax that is greater than any tariff, any railroad rate increase, any war tax now in effect in this country.

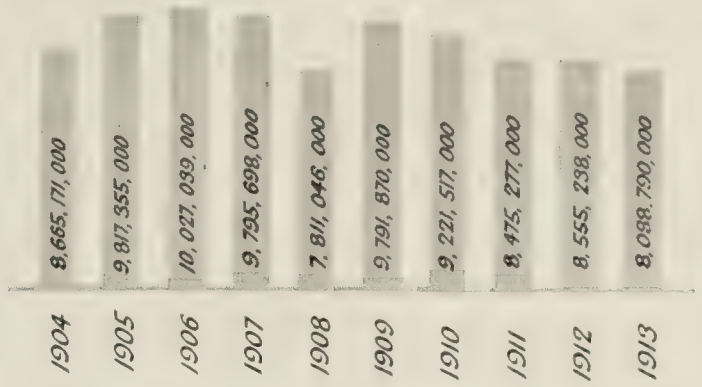
There is some sense in the slogan

"BUILD WITH BRICK"

Brick and Clay Record

Ten Years in the History of Common Brick

Production figures taken from Reports of U.S. Geological Survey.



Note that since 1909 the production has fallen off steadily.

1913 was the worst production year since 1904 and was 500,000,000 behind that year.

No figures are available for 1914

Brick and Clay Record

Comparative cost of Brick, Hollow Tile and Frame Residence construction.

Compiled by the Boston Chamber of Commerce

On a modern Eight Room Residence

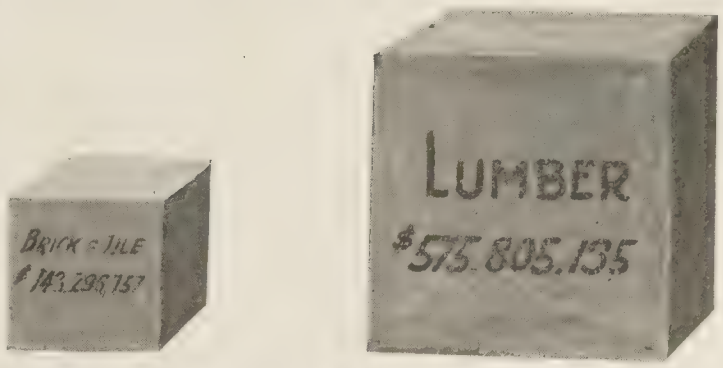
		INCREASE
CLAPBOARD	$6,759.95	
SHINGLE	$6,868.50	1.06 %
STUCCO ON FRAME	$6,952.90	2.9 %
BRICK VENEER ON STUDDING	$7,153.98	5.8 %
STUCCO ON HOLLOW BLOCK	$7,187.65	6.3 %
BRICK VENEER ON BOARDING	$7,226.44	6.9 %
TEN-INCH BRICK WALL, HOLLOW	$7,372.48	9.1 %
BRICK VENEER ON HOLLOW BLOCK	$7,483.16	10.7 %
TWELVE INCH BRICK WALL SOLID	$7,641.00	13.0 %

Remember that Boston, Mass. is near the forests of Maine and of New Hampshire, and not in any great brick manufacturing field. The percentages as shown, as against brick, may be scaled down for other parts of the country.

Brick and Clay Record

The Relative Value OF Clay Building Materials and Lumber

Produced in the United States during 1913



"Building to Burn" is being carried on to a large extent all over the country.

Is it not time some steps were taken by the clay-worker to stop this flood of flimsy construction that is the largest contributor to our annual fire waste?

Brick and Clay Record

A PART OF "BRICK AND CLAY RECORD'S" EDUCATIONAL EXHIBIT AT THE N. B. M. A. CONVENTION

These Charts are Sixteen In Number and are In Color. Fac-Similes will be Published in Subsequent Issues of this Magazine. The Charts are the Beginning of a Larger and More Comprehensive Collection, that will be Prepared by "Brick and Clay Record" and Loaned to Clay Products Organizations for Exhibition Purposes

Priming Dynamite

Increasing the Efficiency and Decreasing the Uncertainty of the Harmless Looking But Highly Potential Stick of Dynamite

ACKNOWLEDGMENT is made to the "Mining and Engineering World," from which the following article is reprinted by permission.

MANY BLASTERS THINK that the priming of a dynamite cartridge is of very little importance—if the dynamite goes off, that is all there is to it. It is not widely known that the success or failure of a good many blasts depends on the position of the detonator—blasting cap or electric blasting cap—in the dynamite. Not only the amount of work done depends in a large measure on the priming, but also the safety of the loading operation is affected in many instances by the position that this detonator occupies. Many accidents have occurred and many men have been killed in loading holes with a primer

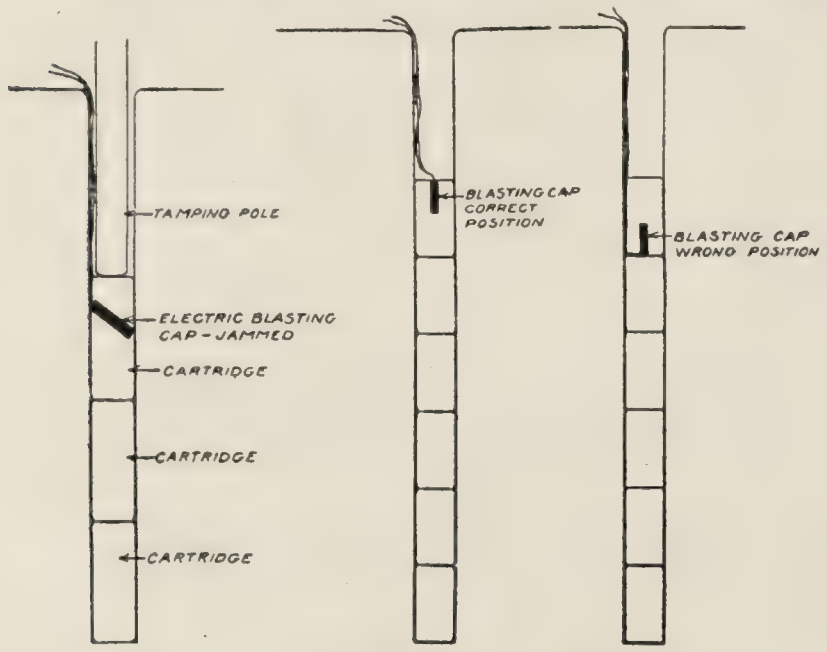


Fig. 1 Fig. 2 Fig. 2-B

made so that the detonator became jammed or wedged in the hole and exploded when the blaster endeavored to force it down.

The points to be borne in mind in making a primer are the following:

The detonator, and by detonator is meant either a blasting cap or electric blasting cap, must be in such a position that it cannot become jammed in the bore hole, as in Fig. 1.

The detonator must be in such a position that it will not be struck by the tamping stick.

The detonator must be fastened to the cartridge in such a way that when the wires or fuse are held in one hand by the blaster, and the cartridge seated with a tamping stick held in the other hand, the detonator will not pull out. The detonator must be entirely embedded in the dynamite.

The loaded end of the detonator, or the closed end, or the "business end" should point toward the bulk of the charge (Fig. 2-A), not away from it (Fig. 2-B). The detonator should not be secured by metal wires, etc.

With an electric blasting cap, the wires should not be fastened on with a half hitch, as in Fig. 3, for although this practice is very common, there is always a chance of a short circuit occurring, especially when high-voltage power currents are used for firing.

With blasting cap and fuse, the fuse must not come in contact with the dynamite, except for about a half-inch next to the cap (Fig. 4). "Lacing" fuse through dynamite causes more burned charges than anything else (Fig. 5).

The maximum detonating effect of a blasting cap or electric blasting cap is out from the closed end. If you place a dozen cartridges of dynamite, end to end in a straight line on the ground, and fire a blasting cap in the end cartridge, with the blasting cap pointing towards all the other cartridges (Fig. 6), the entire line will go off, but if you put this primer in the middle of such a line (Fig. 7), some of the cartridges back of the detonator, that is, those away from which the detonator is pointed, will often fail to explode. If you put the primer cartridge at the end of such a line, pointing it away from the line, that is, pointing it towards the open air (Fig. 8), generally the primer only will explode. This does not always happen in a bore hole, because there the explosive wave is strongly confined, but this shows a tendency of the dynamite, which is in the opposite direction from the closed or "business end" of the detonator, to misfire. Several

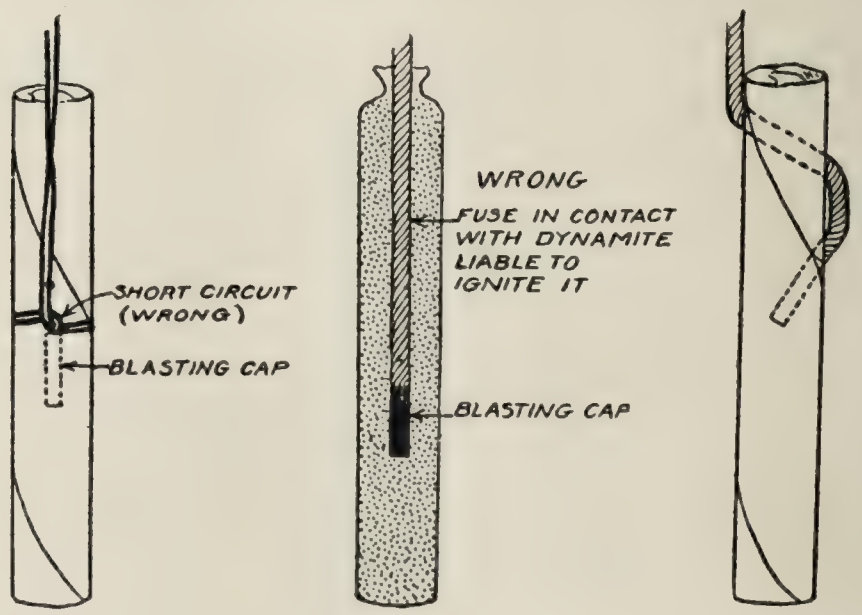
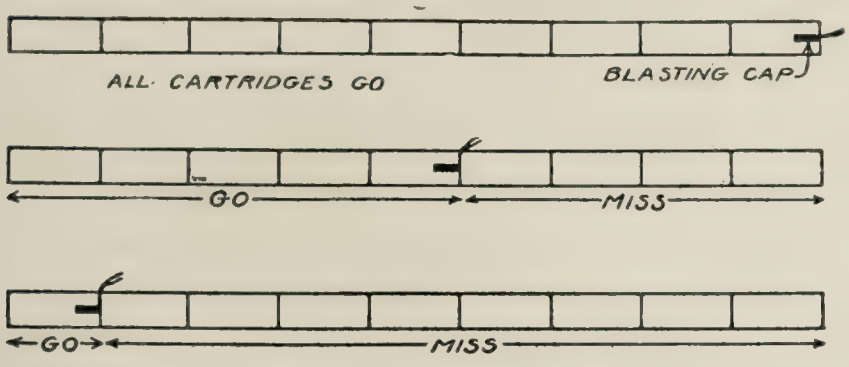


Fig. 3 Fig. 4. Fig. 5

years ago this was demonstrated to a skeptical individual in a quarry shot, where there were 27 holes, each hole containing from 19 to 21 cartridges of dynamite; 13 of the holes having the detonator in the next to the last cartridge and pointing downwards, that is, toward the bulk of the charge; the rest of the holes having the detonator in the same cartridge, that is, the next to the last, but reversed, pointing upwards. These holes were all thoroughly tamped with sand and fired at the same time. While all the dynamite in both sides exploded, where the detonator pointed downwards the rock was broken and cleared from the ledge below the bottom of the holes;

where the detonator was pointed upwards, about one-third of the distance from the bottom of the holes upwards, the rock was broken up but left in place. This showed that when the detonator pointed downwards, the full power of the dynamite was realized; where the detonator pointed away from the bulk of the charge, the full power was not realized, but a great deal was wasted.



Figs. 6, 7 and 8

When a cartridge of 40 per cent straight dynamite is suspended vertically in the air, and a blasting cap supported at right angles to it, and pointing directly at it (Fig. 9) is fired, the dynamite will explode at a distance of 24 ins. from the blasting cap, but if a cartridge and blasting cap are hung parallel with each other, that is, the blasting cap pointing either straight up or straight down and parallel to the dynamite cartridge, so that it does not shoot directly at the cartridge (Fig. 10), the dynamite will not explode until it is brought to a distance of 15 ins. or less. When the blasting cap is horizontal and the cartridge of dynamite hung vertically and the cap supported at the level of the middle of the dynamite cartridge but pointed so that it does not point directly at the dynamite but a little to one side (Fig. 11), this distance where an explosion occurs is lessened still more. When the cap is pointed directly away from the dynamite cartridge (Fig. 12), it will not explode the dynamite cartridge every time, even when within 4 ins. of it.

The ideal primer with an electric blasting cap would be one where the detonator lies directly in the axis of the cartridge near the middle, and with the wires secured to the cartridge, in such a way that they could not possibly pull out, by some strong non-conducting material like string. By using a curved puncher (Fig. 13) it is possible to get an electric blasting cap almost in this ideal position, where it may be held in place securely by taking a half hitch with a piece of string around the wires, is then

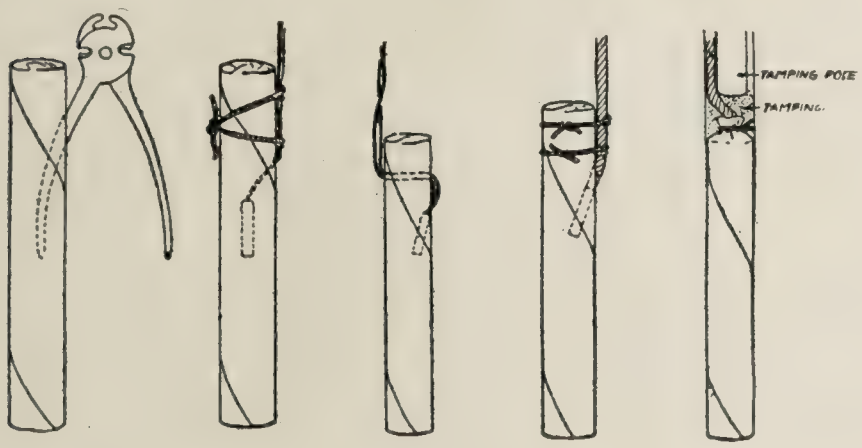


Fig. 13 Fig. 14 Fig. 15 Fig. 16 Fig. 17

carried once or twice around the dynamite cartridge and tied tightly with a square knot (Fig. 14).

Another way of priming with an electric blasting cap without using string is to punch a hole through the cartridge about 2 ins. from the end and lace the electric blasting cap through this and insert it in the side of the cartridge.

With short wires, 4 ft. or less, the ends may be passed through this hole after the cap is inserted in the cartridge (Fig. 15), but with long wires it is apt to either make the hole so large that it does not make a secure fastening, or it may even cut the cartridge in two.

With blasting cap and fuse, inserting the blasting cap in the side of the cartridge about one-third from the top and tying it tightly with one or more pieces of string, keeps the cap away from the tamping stick, and if carefully done with a curved puncher, places the cap almost in the axis of the cartridge (Fig. 16).

The orthodox method of opening up the paper at the top of the cartridge, punching a hole in the dynamite, inserting the cap and fuse into that, and then tying the paper down around the fuse as in Fig. 17, gets the blasting cap in a good position, but is a difficult operation to perform on account of the tendency of the string to slip off the paper and the difficulty of getting the string tight enough to prevent the fuse from pulling out. It also is liable to kink the fuse abruptly if the primer is seated firmly with the tamping stick.

Dynamite, when strongly confined in a bore hole, burns very rapidly when it is ignited, and on this account the lacing of the fuse through the dynamite cartridge is a practice which is strongly condemned by all explosive

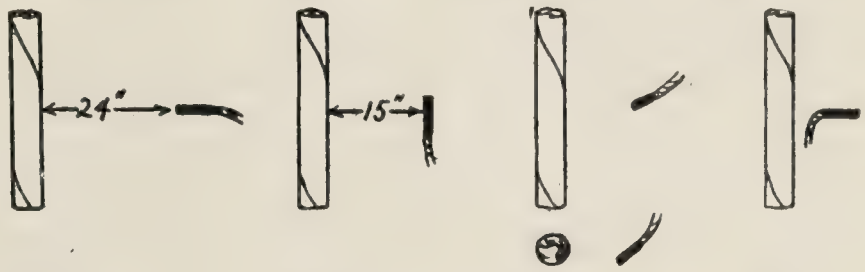


Fig. 9 Fig. 10 Fig. 11 Fig. 12

manufacturers. It seems strange that very much of the dynamite would burn before the cap would explode, but the fact is, dynamite burns very much more rapidly when confined than when in the open, and it has been known to burn up entirely in a bore hole which contained a perfectly good cap without any of the dynamite exploding, the cap, of course, exploding and doing no work. Burning dynamite makes a large quantity of exceedingly poisonous fumes, and a number of fatal accidents have occurred from dynamite burning up in the bore holes in mines and tunnels, due either to lacing the fuse through the cartridges, or from other causes, such as matches, sparks or burning oil dropping into the charge bore holes. These fumes from burning dynamite are so frightfully poisonous that no chance whatever should be taken of a charge catching fire, especially when it is so easy to prevent it by taking the proper care in preparing the primer.

The bane of blasters in mines and tunnels is the smoke and fumes from the explosive, and while no explosive has yet been invented which does not give off more or less irritating fumes, the quantity of fumes given off can be materially decreased by insuring complete detonation of the charge, by using the strongest obtainable blasting cap or electric blasting cap, by inserting the primer in either the last or next to the last cartridge in the hole, and placing the detonator so that the "business end" points towards the bottom of the hole. It is advisable to place one cartridge on top of the primer as it serves to cushion the primer from the tampering stick when used for packing the tamping. The stronger the confinement and the larger the detonator, the more perfect the explosion will be, and the less the amount of noxious fumes.

Questions and Answers

Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants Small Experimental Kiln

625. *District of Columbia—I am a chemist interested in ceramic work and wish to build a small experimental kiln in my house. Could you give me designs for a coke-fired furnace to fire and glaze chinaware, inside dimensions to be about 18x12x15 in. or equivalent capacity, and also the approximate cost of building it?*

If you have no information or pamphlets available, you probably can refer me to books or articles giving what I wish to know. My idea was to get a Denver fire clay muffle of about that size and build a furnace similar to the usual coke fire assay muffles.

The University of Illinois publishes a bulletin giving illustrations of seven test kilns, among which is one which is coke-fired. A book called "Pottery" by George J. Cox contains a number of designs for small furnace or kilns and directions for building them. This book is listed at $1.25 and can be obtained through "Brick and Clay Record's" book department.

California Fire Clays

630. *Illinois—Will you please give us information as to the quality of California fire clays? This would include their refractory natures and the amount of heat that they will stand under working conditions.*

If you will write to the California Geological Survey, we believe that they will be able to supply you with publications which will give the information above requested.

In Part 2 of the 1913 issue of the United States Geological Survey, there is an article on Magnesite, by Chas. G. Yale and Hoyt S. Gale, which deals with the California deposits of this material.

If any of our readers are interested in fire clay deposits in California and will send information relative to the chemical analysis and refractory nature of their clays, the same will be forwarded to the correspondent whose question is published above.

Wants Information As to Stack Area

645. *Minnesota—I am thinking of putting in down-draft round kilns, thirty feet in diameter and holding 100,000 brick. There will be ten fire places, which allows one fire place for each 10,000 brick. How much grate surface would be required for each fire place? I am using two square feet of grate surface in each fire place in my scove kilns and figure on 10,000 brick to each fire place. What size chimney would you recommend using? I would want to use one chimney for two kilns, arranging it so that I could use it on one kiln at a time. The yard is pretty well out in the open and is on a high bank.*

Regarding the size of a chimney or stack to use with a 30-ft. down-draft kiln, would say that we recommend 3 ft. by 5 ft. 9 in. inside measurements with a 9 in. spider or separating wall running up the middle. This will leave the inside stack area for each kiln 2 ft. 6 in. by 3 ft. The object of the spider is to prevent the draft of one kiln from interfering with the other. The spider does not in all cases go to the top of the stack but it should go up at least 10 ft. from the base and should be not less than one-third of the stack high.

You speak of putting in two round, down-draft kilns, each of 30 ft. diameter and each holding 100,000 brick. Are you at all certain that you will succeed in setting 100,000 brick in a 30 ft. diameter kiln?

Regarding the grate surface, we would suggest that you allow five square feet to each furnace and that your stack be not less than 35 ft. high.

Raises Heat Too Quickly

636. *Pennsylvania—We have trouble in burning our brick, the heads dropping off in the arches. We charge these arches with wood and coal all the way through, and get our fire completely through in about twelve hours.*

You are getting your fire through too quickly. The heads are "popped" for two reasons—1.The sudden generation of steam in the brick, and—2.The uneven heating of the brick—heads being heated, while the protected part of the brick does not receive the heat. Strains are set up in this way that force the head of the brick to pull away from the body. Try increasing your time to eighteen hours, raising the heat slowly in the early part of the burn.

Wants to Make Plaster Molds

626. *Texas—Where can I obtain a book giving information relative to plaster of paris mold making? Or a concern which deals in molds?*

We do not know of any book or other publication which gives information relative to the making of plaster of paris molds, but would say that you can secure the molds from the Architectural Decorating Company, of Chicago, or from the Decorators Supply Company, of the same city.

Coloring Matter Used in Clayworking

652. *New York—The appearance of an advertisement for rough-cut brick, printed in colors in a recent issue of "Brick and Clay Record" prompts me to ask just how extensive is the demand for artificial colored brick and the probable quantity of color used annually by brick, architectural terra-cotta and art tile manufacturers. Also whether this demand for artificially colored burned clay products is increasing, stagnant or decreasing. As everybody knows, coloring agents are particularly hard to get, at the present time—that is, coloring agents that emanate from coal tar. What I would like to know is whether natural earth colors or coal tar colors are used in the various clay products lines. I would also like to learn*

from first-hand sources, whether brick manufacturers in particular are especially interested in bringing out new colors in their lines of brick, like green, for instance; would there be any great demand for brick with these out-of-the-ordinary shades? Do common-brick manufacturers use red coloring matter to any extent? What degree of heat would these coloring materials have to withstand?

In the brick industry red hematite is used extensively for the giving of a uniform red color to common building brick. It is mixed with molding sand and put on the surface of each brick where it forms but a small portion of a very thin film. One concern with an output of about twenty million brick per year uses one carload of red hematite every two years.

In the architectural terra-cotta industry the only artificial colors used are those employed by potters and what these consist of can be readily learned by the investigation of glazes in common use. Here again it will be found that the amount of color is very small compared to the bulk of the finished product as the coloring agent forms but a small part of the thin film on the surface of the terra-cotta.

In face brick, oxide of manganese has been used for many years in order to give the gray tinge to fire clay brick which would otherwise be of a buff-white color. This manganese, if in powdered form, gives a pepper-like speckle which at a very short distance becomes a solid gray. When used in larger lumps, it gives a more speckled appearance and in this way accents the white ground. It has been calculated that the addition of manganese increases the cost of making brick by about two dollars per thousand and since many factories making the kind of face brick to which manganese can be added, figure their cost of production at between nine and eleven dollars per thousand, you will see that the use of manganese is a rather expensive proposition.

For many years theorists have figured that a green brick —a brick which would be naturally green, not "go green" in the wall—would be welcomed by architects. There is no knowing, however, what sort of a reception it would get and if it carried a high price, the chances are that it would receive a very cold shoulder. So far as our knowledge goes, coal tar by-products have never been used in connection with the brickmaking industry—the reason being that no coal tar dyes could withstand the degree of heat necessary to mature the brick.

In the manufacture of the rough-cut brick advertised in the recent issue of "Brick and Clay Record" which advertisement was printed in colors, would say that these brick are burned at from 1,800 to 2,100 degrees F. No artificial coloring matter is added, the color being produced solely by the action of a reducing atmosphere in the kiln. It is much cheaper to close the dampers and allow the smoke and fumes from the coal to act upon the brick than it is to add any coloring matter to it. Brick made from fire clay—which are the kind of brick to which manganese is added—are burned to 2,200 degrees F. and sometimes beyond that point.

The question asked opens some interesting points, however, and "Brick and Clay Record" will welcome any correspondence which might come from those experienced in the use of artificial colors in the manufacture of any burned clay product.

Dipping Brick to Change Color

627. *Indiana—Is there any way to get different colors on the face of brick by dipping them and then burning?*

In order to answer this question intelligently, it would be necessary for us to have a piece of the brick that you desire to make in a different color and a very exact statement of the process that you use, beginning with the manner in which your clay is harvested up to the point of the kind of fuel used in its burning and the time which you give to water-smoking, burning and cooling.

Absorption Tests on Face-Brick

654. *Illinois—Very recently the writer was led into a discussion relative to the absorption test on various kinds of face-brick. Not being thoroughly versed on the subject, I could not hold up my end of the conversation as I would have wished. Will you give me what information you have as to the method of making absorption tests, their value and the best way of making use of the results of these tests in connection with the sale of face-brick?*

The most common way of making an absorption test is to first, dry the brick to be tested—particularly if it has been taken from a pile that has stood out-of-doors for any length of time. The drying can be done in the oven of an ordinary cook-stove. Second—it should be accurately weighed. Third —it should be immersed in water for at least twenty-four hours. Fourth—it should be wiped with a soft-cloth or sponge, to remove all "surface water." Fifth—it should be again weighed, and with the same care for accuracy. The process may be varied, according to the severity of the test required, by substituting a three-quarter immersion for a complete immersion, the former filling the pores more accurately, since the water is absorbed by capilliary attraction, while the air escapes from the upper and non-immersed surfaces. Or—still another variation—immerse the brick for twelve hours, bringing the water to a boiling point during the last part of the twelve hour period and continuing it at a boil for not less than half an hour. This opens up pores in the brick that would otherwise remain closed.

Regarding the value of these tests—this is problematical. The true test of the value of face-brick lies in its ability to make a dry wall, and to keep its face clean. A dry-press brick, absorbent to a great degree, yet flashed on its face, back and heads, will accomplish these purposes quite as well (and it is claimed, better) than the most impervious of stiff-mud brick. When the question of efflorescence is raised, there is little choice between a brick that extracts the free lime from the mortar, bringing it out at the center of the brick, and spreading it toward the edges, as against a brick that, while itself neutral, still receives the limey deposit from the mortar joint, and shows the white discoloration after every warm, rainy spell. The value of the absorption test is not nearly so great as the value of the "time and use" test, which can be shown a prospective customer in the house where the brick you are selling him was used—perhaps some years ago. That will tell him, if he has a grain of common sense, more than he can learn from these absorption tests, which are not practical, in that they do not approximate any of the conditions that the brick is to meet in its daily work. The principle lying back of the effectiveness of the "best by time's test" demonstration is the old one of "seeing is believing," and while the laboratory test might appeal to the imagination of some people, the vast majority is generally more easily and positively convinced by actual results.

As to the best way of using these tests in the marketing of face-brick, we think that you should demand a real absorption test, made along the lines suggested, every time your competitor tries the time-honored (but otherwise without honor) method of pouring a teaspoonful of water on the face of his (and your) brick, and then "leading" the little lake along the line that shows in the face of your brick, and where your brick has the greatest porosity, and away from the same line in his own brick, although he knows, as well as you do, that he is trying to cheat.

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Heat and Power Equivalents (Radford)

1 H. P. per hour equals

.746 K. W. hour.
1,980,000 ft. lbs.
2,545 heat units
243,740 K. G. M.
.175 lb. carbon oxidized with perfect efficiency
2.64 lbs. water evaporated from and at 212 deg. F.
170 lbs. water raised from 62 deg. F. to 212 deg. F.

1 H. P. equals

746 Watts
.746 K. W.
33,000 ft. lbs. per minute
550 ft. lbs. per second
2,545 heat units per hour
42.4 heat units per minute
.707 heat unit per second
.175 lb. carbon oxidized per hour
2.64 lbs. water evaporated per hour from and at 212 deg. F.

1 Heat Unit (B.T.U.) equals

1.055 Watt seconds
788 ft. lbs.
107.6 kilogram meters
.000293 K. W. Hour
.000393 H. P. hour
.0000688 lb. carton oxidized
.001036 lb. water evaporated from and at 212 deg. F.

1 Heat Unit per sq. ft .per Minute equals

.122 Watt per sq. in.
.0176 K. W. per sq. ft.
.00236 H. P. per sq. ft.

1 lb. carbon oxidized with perfect efficiency equals

14,544 heat units
1.11 lbs. anthracite coal oxidized
2.5 lbs. dry wood oxidized
21 cu. ft. illuminating gas oxidized
4.26 K. W. hours
5.71 H. P. hours
11,315,000 ft. lbs.
15 lbs. water evaporated from and at 212 deg. F.

1 lb. water evaporated from and at 212 deg. F. equals

.218 K. W. hour
.379 H. P. hour
965.2 heat units
103,000 K. G. M.
1,019,000 Joules
751,300 ft. lbs.
.0664 lb. of carbon oxidized perfectly

The "High" Side of a Pulley

Does a belt have a tendency to climb to the "high" side of a pulley, and which is the "high" side?

I have heard good mechanics argue over this question, and each insist that it did or did not do so, according to the views of the individual. The trouble generally is that a misunderstanding arises through confusing the term "high side" with "largest diameter."

Most pulleys are made with a crowned face, that is the diameter of the pulley is a trifle larger at the center of the face than at the edges. It is not known who was the inventor of the crown-faced pulley, but he certainly rendered

a great service to all users of power transmission machinery. The crowned face causes a belt to ride on the center of the pulley face, even if two pulleys are slightly out of line, because a moving belt always seeks the largest diameter. This truth can be demonstrated by winding evenly a piece of tape on a spool which is shaped like a barrel. In this experiment

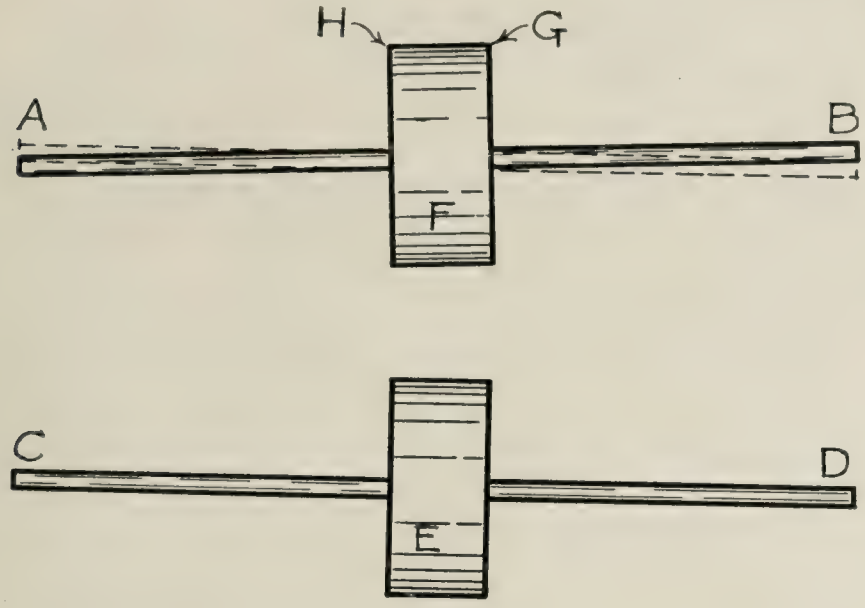


Fig. 1

the tape represents the belt and the spool takes the place of the pulley.

It will be seen that the tape tends to pile up at the point where the diameter of the spool is the greatest.

Now, with regard to the true meaning of the expression "high" side. In Fig. 1, let us imagine that we have two shafts, A B and C D, with pulleys E and F. This figure shows, in an exaggerated way, that the two shafts are not parallel, the end B being higher than A. A millwright would refer to the point G as the high side of the pulley F, and to H as the low side. Even if the figure represented a plan view instead of an elevation, the terms "high side" and "low side," as above designated, would still hold good among millwrights. With this arrangement of pulleys, however, the belt will move over to the "low side" regardless of which way the pulleys revolved, and if the two shafts were much out of parallel, would run off of the pulley entirely.

To fix this point in mind, we can experiment with the tape again by winding it on a lead pencil, as shown in Fig. 2. Hold the tape square with the pencil and revolve the latter. The tape will wind up on itself in the center of the pencil's length. Now lead the tape onto the pencil at an angle such as is indicated by the dotted lines in the illustration. The point end of the pencil will then correspond to the low side

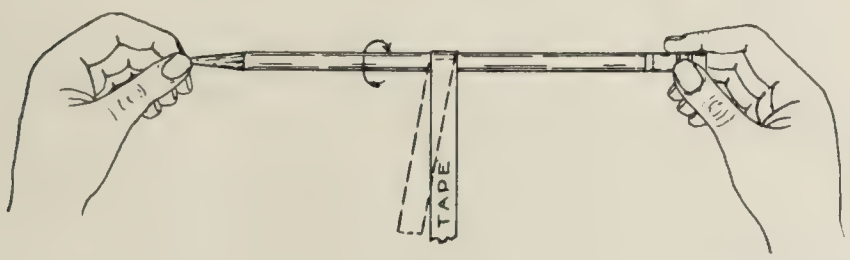


Fig. 2

of a pulley. The tape in this instance will wind in a spiral right out to the point of the pencil.

A belt on a shaft or pulley behaves in much the same manner as the tape on the pencil.

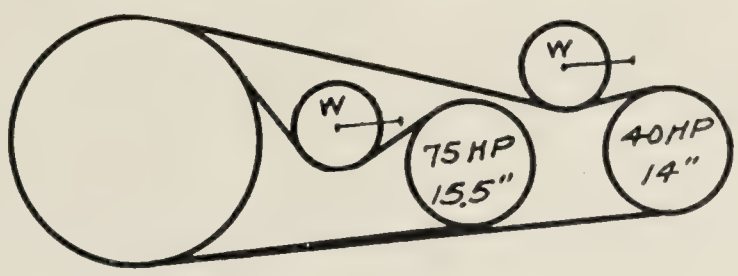
Belt Arrangements for Motors on Same Drive

With reference to E. A. Betts' letter in your March 16 issue, I note what he says about short drives and the necessity of keeping belts tight when such drives are used. In that point I disagree with him, and show herewith how he could shorten his drive considerably and, by the use of idlers, run the belts very much more slack. An idler on a belt does not necessarily mean that the belt is being run tight. In many instances, now-a-days, idlers are applied for the purpose of increasing the arc of belt contact, for relieving the pressure on the bearings, for decreasing space requirements and increasing all around efficiency.

With an idler the belt is put under no greater stress than is necessary to carry the load. The weights on the idlers may be so adjusted that the slack side of the belt is wrapped around the pulley to the extent necessary to pull the load with greatest ease and absolutely no slip. With an idler of the type I have illustrated, adjustment is automatic with increase in load. That is, when the load increases the belt stretches and the idler sinks down a little farther—wrapping the pulleys just a little more.

Mr. Betts' belt arrangement is all right, where there is plenty of room. In fact it is quite possible that his arrangement is better than mine as far as first cost is concerned, and what is more, by taking good care of the belts he can run them quite slack even without idlers, but to bring the inside pulley up as close as I have indicated in the drawing it would be almost impossible to run slack without an idler.

I know of instances where two rider belts are being used, instead of one as in this drawing. The principal objection to such arrangements is the wear that is bound to result where speeds are not computed accurately in the first place, causing slippage between the belts. Slippage of this kind is a serious and costly thing on account of the high coefficient of friction



of leather or leather. Belts are bound to creep, of course, and there will be some wear on that account, but the installer should be very careful to get the speeds so adjusted that there will be no slip.—W. F. Schaphorst.

Buying Coal on a Heat-Unit Basis

Owing to a constant and growing demand for information on the composition and properties of Illinois coal, the State Geological Survey, at the University of Illinois, Urbana, Ill., has just issued Bulletin No. 20 which contains much valuable data and facts regarding these coal deposits.

There is a marked tendency, it is claimed, on the part of coal users to seek after some basis of purchasing this commodity other than on a fixed price per ton. The purchase of coal under specification is as advantageous as a definite understanding regarding the quality and other features of any other product, or of a building operation or engineering project. In other words, the brickmaker should exercise the same care in buying his coal as he does his machinery or other equipment, that is, on a certain guaranteed capacity or output.

Since the heating value expressed in British thermal units per pound is the most direct measure of the value of coal, contracts made on what is termed the "heat-unit basis," enable the purchaser to get what he pays for.

The result of anaylses of Illinois coals and other valuable information regarding the purchase of coal upon specification may be found in the above mentioned bulletin.

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Publicity's Invariable Parasite

Just as soon as any big publicity movement is planned, certain groups of men—sometimes they do not work in groups, but singly—begin to see how much of the fund it will be possible to divert to their own personal gain. Every once in so often, these men are apprehended, and, being brought into court, either escape with a warning, or do a little real public service on the rock pile. Scarcely had the announcement that the National Brick Manufacturers' Association had planned a publicity campaign, than certain (or we might better say "uncertain" individuals) became active. The following letter, from Charles Jacobs, secretary of Bricklayers' Union No. 18, of Ohio, is called to the attention of "Brick and Clay Record's" readers, with the suggestion that they act as their best judgment dictates:

It has come to our notice that four advertising solicitors, of Chicago, Ill., are seeking, in various parts of the country, to secure advertisements for a so-called "Golden Anniversary Souvenir" of our Toronto convention, to be held in January, 1916, claiming that it is to be published under the auspices of the Bricklayers,' Masons' and Plasterers' International Union of America. On their receipt blanks and letter heads, the official emblem of the international union is used, unauthorized, and the whole scheme has been entered into without its knowledge or sanction. The men claim to represent a so-called publicity commission, but neither the receipts they give for the money they receive, nor their letter-heads, show where their headquarters is located. We have tried to locate the four or five men who are working this advertising scheme, but up to the present time, we have failed to connect with them. We understand that these men are now working with the brick and other clay products producers in the eastern states.

"Brick and Clay Record" has submitted the above to the secretary of the international union, and has found that the statements made by the secretary of the local union are correct. It takes pleasure, therefore, in stating that no authorization has been given for the solicitation of advertising for any souvenir or program of the coming convention in Toronto, and that support given to the authorized committee is apt to be a useless waste of money.

Canadian Firm Does Some Assorted Advertising

Some of our friends across the northern border can, and do show us something in the way of progressiveness, that makes us a little ashamed of our own lack of ability to adopt modern merchandising methods to the sale of burned clay. For instance, the London Pressed Brick and Tile Company, of London, Ontario, is using small, blue felt pennants, measuring about 6¾ inches in length, on which the words "Build with Brick—Specify Car-Bex —They Save You Money" are printed in heavy white ink. The same words appear on small blue and white stickers, similar to the "Build with Brick," "Pave with Brick" and "Tile Your Farm" stickers that "Brick and Clay Record" has issued. Another novelty is the "billboard envelope," which carries a reproduction of "Brick and Clay Record's" posterette, with the wording changed to read "Fire Cost Canada $25,000,000 last year." This envelope also has printed upon it several arguments taken from the Stoddard series, published in this magazine from August to November, last year. C. S. Parker, manager of the London Pressed Brick and Tile Company, writes, under date of January 27:

We are getting up a booklet entitled "A Made-to-Order Fire," practically the same that was issued by the Detroit Brick Mfrs. & Dealers' Assn., and shall be glad if you will advise us what price you will charge us for the electros of the cuts made from the photographs you took of the buildings, both before and after the fire—that is, four cuts in all. The original cuts were published in the October 20, 1914, issue. The writer is trying to organize a brick manufacturer's association in this territory, and will appreciate any suggestions you can give him, as to articles of incorporation, by-laws, etc.

The cost of the electros will be very small—probably between 60c and 65c each, and, in addition to this, you will have to pay import duty. Regarding articles of incorporation, etc., we think you will find that the American Face Brick Association has a very well arranged set of "basic law" rules, and think you can secure a copy by writing to R. D. T. Hollowell, secretary, Park Building, Pittsburgh, Pa.

Wants Convention Papers Published

Ryland H. New, vice-president of the Hamilton and Toronto Sewer Pipe Company, of Hamilton, Ontario, writes an interesting letter, regarding the recent convention of the Canadian National Clay Products Association. His letter follows:

No doubt you are aware of the convention recently held in Toronto by the Canadian National Clay Products Association. The writer believes that the publication of the reports and papers given at this convention would be most beneficial to your readers. He believes that some of the papers read were the most instructive and practical that he has ever heard at any convention, and he is sure that you will agree with him, when you have an opportunity of reading them.

The February issue of the "Canadian Clay Worker" announces the early publication, in book form, of all papers that were read, and of all of the discussions that followed. With characteristic Canadian spirit and progressiveness, he announces the probable publication date as March, which is a great deal better than some other associations—which take nearly a year to get their "transactions" in shape. Gordon Keith, secretary of the C. N. C. P. A., suggests that reservations be made at once,

and announces the price, which is 50c per copy. After that book is published, "Brick and Clay Record" hopes to secure permission to republish some of the papers, but it is only natural that they should be given their first publicity in the book which will be issued by the Canadian association.

Brickmakers and Bricklayers Work Together

With the sincere hope that the example set by the bricklayers' union of St. Cloud, Minn., will have many imitators, the letter reprinted below is set in bold-face type. It comes from William Beutler, secretary of the Beutler Brick and Tile Company, of St. Cloud, Minn., and reads:

Last week the local bricklayers' union asked the brickmakers of St. Cloud (Beutler Brick & Tile Works and Hess & Son) to come to their meeting—that they wished to work together with us on advertising brick building—and they decided that they would pay one-half of the newspaper, film-theatre slides, street car, metal signs and other advertising we should agree upon.

This is worth more than a ream of paper, filled with resolutions, or a week's talk, that generally ends in exhausting the oxygen in the atmosphere and sending the mercury higher in the thermometer. It is hoped that this "little candle," lighted in St. Cloud, will "shed its beams" to every corner of the country.

Wants Names of Manufacturers of Enamel Brick

"Printers' Ink" is unfading. A message may be given that makes a lasting impression, although the response to it is not immediate. This is so of advertising, as well as of reading notices. For instance, the Consolidated Fuel and Lumber Company, of Ishpeming, Mich., writes under date of March 6:

Will you kindly advise us who were the manufacturers of the Norman size enamel brick that were used in the Jewell laundry, as described in your article of June 16, 1914?

The enamel brick in question were "Hy-Namel" made by the Hydraulic-Press Brick Company, of St. Louis, Mo. We are glad to know that you refer to past issues of our magazine—it proves that they contain too much valuable matter to be consigned to the waste-pile after the first reading.

Wants New Slogan on Posterettes

Speaking of posterettes, another clayworking field comes forward with a suggestion, which is almost ready for adoption. It comes from the United States Fire Brick Company, of Uniontown, Pa., which writes:

We received the "stickers" in reference to building with brick. We do not manufacture building brick, but if you have any in reference to *paving* with brick, we would be glad of an opportunity to exchange.

"Brick and Clay Record" has artists at work, trying to secure an acceptable design for this, the second in its series of "poster stamps"

Wants Standard Rules for Measuring Builders' Work

This magazine is always willing to assist in the standardization of sizes, costs, or anything else that will give its readers a better basis for computation. It publishes, therefore, the following from G. A. Wright, an architect, of San Francisco, Cal., and suggests that readers correspond direct with Mr. Wright, if they have any data that will be of value. His letter follows:

If you happen to have by you any data or information upon: first, reliable short cuts in estimating; and, second, any arguments for or against the "quantity system" of estimating, will you send me a copy, letting me know if you wish the same returned to you, after I have made a note of the same? I am trying to make my office files upon the above subjects more complete, and will appreciate your kind assistance. Any personal suggestions will be appreciated, and if there be any standard rules for measuring builders' work in your locality, I will be glad to receive a copy of the publication printing the same. Your readers may have some information on these subjects that would be of value to me.

Mr. Wright asks that communications be addressed to his home address, which is "Knollwood," R. F. D., No. 2, St. Helena, Cal.

Another Variation in Burned Clay Slogans

Since it takes "many men of many minds" to make up the world, it is not to be expected that everyone will agree on any one point—even a slogan. We have received a number of suggestions as to the proper wording for the posterettes, and this is a fair sample. It comes from the Hammett Fire Proofing Company, of Washington, D. C., and reads:

We certainly would have been pleased to have received 250 of the posterettes, if, on the bottom, the wording had read "Tile with Clay Products." We are not at all interested in brick, but are very much interested in burned clay that is made in the shape of hollow clay fireproofing.

Just as soon as some one will invent a word, or a series of words, that will adequately describe hollow building tile, made of burned clay, "Brick and Clay Record" will have sketches made of one or more posterettes. At the present moment, there are about five different ways of describing the same thing, and nearly every word so far used, can mean "cement block" just as much as burned clay materials. Here's a chance for some good thinker to make his name immortal.

Brick vs. Hollow Tile

A point which may well be considered by the "Committee of Ten" which has charge of the premilinary work connected with a national publicity fund for brick, may well take into consideration, is brought out by the following letter, written by Ernest H. Abend, president of the Belleville (Ill.) Brick Company:

"Brick and Clay Record," as well as other publications and associations devoted to burned clay products, are giving a lot of space and time these days demonstrating and publishing the virtues of hollow building tile over solid brick walls.

Architects also, the country over, are overlooking no opportunity to do the same thing, and consequently hollow tile is rapidly displacing brick for backing up purposes, especially in residences, and making enormous inroads into our sales.

In view of the above, what is to become of the brick manufacturer who hasn't the raw material and salable hollow tile, and who finds that he cannot buy and ship in his raw materil for that purpose and at the same time compete with those who have it available at their plants?

There are many of us brickmakers in just such a position and no doubt comments in your "Questions and Answers" touching on this situation would be read with a great deal of interest by many seriously affected by this hollow tile menace.

It might be well for some of the brickmakers who feel that hollow building tile is indeed a "menace" to write their opinions as to the best thing to be done, under the circumstances. "Brick and Clay Record's" Letter Box is open for that purpose.

Wants to Exchange Cost Data

The Hope Brick Works, of Hope, Ark., has written a letter which offers great possibilities to the brickmakers who are

willing to exchange information. It is self-explanatory, and should be given careful reading.

We would be glad to secure information as to the actual cost of manufacture in brickmaking, from as many plants as will be willing to give their figures, in exchange for similar information given them by us. In this way, it may be that we will be able to find leaks, and stop them, and, at the same time, show others where their leaks are, so that they, too, can bring their costs down to the right figure.

Some wise man has said that the only way a man can tell whether his own costs are right, is by comparing them with costs in other plants. There is no doubt but that he is correct, and while we all know that the different items that go into the total cost vary, in many plants, we are persuaded that they will average up pretty well in any given locality.

One thing is certainly true—that costs do not vary nearly as much as selling prices, and yet selling prices are supposed to be "cost plus a reasonable profit." Thus, if cost be the basis of all selling prices, there must be a vast difference in costs, or—which is much more liable to be true—a vast difference of opinion as to what costs really are.

For fourteen years, our labor cost has not varied more than 25c per M. brick, and the total cost has not varied much more than that. Yet we know it to be a fact that we have never been able to keep a correct record of *all of the costs* that entered into the total expense, but have had to depend upon the figures given us by total expenditure divided by total quantity manufactured.

There is no doubt but that some items have varied, from year to year, increasing and decreasing. The total cost has, however, remained practically unchanged. If we knew what these increases and decreases were, we might be able to keep the low figures from going higher, and make the high figures go lower.

To show that we are not asking for information that we are unwilling to give, we show below our costs for 1914, based upon net output—that is, excluding loss of ware in machine room, dryer, kilns and yard. The various items are divided by the quantity of brick actually shipped out of the yard during the period.

Labor	2.31
Superintendance and sales	.30
Fuel	1.48
Depreciation to plant, tools, etc.	.64
Repairs	.35
Interest on borrowed money	.12
Feed for teams, clay-pit and delivery service	.29
Incidental expense	.05
Taxes	.03
Oils, grease and waste	.03
Stationery and printing	.02
Bad accounts charged off	.05
Commissions paid	.04
Total cost per M. brick	5.71

Our yard makes 4,500,000 brick a year. Are our costs low, average, or high?

We will be very glad to explain how we arrive at these figures, to anyone who will write us. We ask, however, that they be as frank, in regard to their costs, as we have been with ours.

This is the "New Competition" in its best form. It opens the door to a very interesting correspondence, which will be made all the more valuable, if conducted through this department, since, in that way, it will reach more plants, and bring out a greater fund of information.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

THE INTERSTATE COMMERCE Commissioners have instituted an investigation into the proposed increase in brick rates from Ohio points, which were contained in schedules just filed by the Toledo & Ohio Central Railway Company, and has postponed the schedules until July, 1915.

A complaint has been filed with the Commission by the Robinson Clay Product Company, of Akron, Ohio, against the Illinois Central Railroad Company; the Chicago Junction Railway Company; the New York, Chicago & St. Louis Railway Company; the Akron, Canton & Youngstown Railway Company; and the Wheeling & Lake Erie Railroad Company, the complaint stating that a carload shipment was made on October 17, 1913, from Akron to Chicago, Ill., on which demurrage charges were made, due to the misrouting of the shipment by the roads. Reparation to the amount of the demurrage charges are asked in the complaint.

The National Clay Works, of Mason City, Iowa, has entered a complaint against the Minneapolis & St. Louis Railroad Company, which asks for demurrage charges amounting to $358.00, which was paid on several shipments of coal made from Panama, Ill.

The Commissioners have suspended, until July 10, 1915, the operation of supplement No. 28, I. C. C. tariff No. 2465 of the Chicago & Illinois Railroad Company; and supplement No. 6, I. C. C. tariff No. 6205, of the Cleveland, Cincinnati, Chicago & St. Louis Railway Company. The suspended tariffs provide for the cancellation of commodity rates on drain tile, in carloads, from St. Anne and certain other points in Illinois, to various points in the states of Wisconsin, Minnesota and Michigan, the effect of which is to make applicable thereon class rates. The present and proposed rates to a few of the destinations involved are as follows:

From St. Anne, Ill. (In cents per 100 pounds)

	Rates		
to	Proposed	Present	Increase
Milwaukee, Wis.	10.2	6	4.2
St. Paul, Minn.	19.2	10	9.2
Madison, Wis.	12.2	7	5.2
Ashland, Wis.	22.2	12	10.2
Racine, Wis.	10.2	6	4.2
Ironwood, Mich.	22.2	12	10.2

REPARATIONS

Reparations of interest to the clay products industry have been allowed, during the past two weeks, and are as follows:

The Excelsior Brick Company vs. the Atchison, To-

(*Continued on page* 703.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Modern Method of Controlling Kiln Temperatures

(*As read before the 29th Annual Convention of the N. B. M. A. at Detroit, February 15-20, 1915, by J. W. Robb, manager of Clinton Paving Brick Company, Clinton, Ind.*)

The importance of the control of temperature in firing brick kilns is now generally recognized. Probably no greater evidence of this statement could be found than by consulting the last edition of the Encyclopaedia Britannica in which you will find a very good article entitled "Brick," by Dr. William Burton. In this article, these statements appear:



Burner Using Brown Indicating Pyrometer at Plant of Kittanning (Pa.) Clay Mfg. Co.

"The burning or firing of brick is the most important operation of their production, for their strength and durability depend very largely on the character and degree of firing to which they have been subjected. The action of the heat brings about certain chemical decompositions and recombinations which entirely alter the physical characteristics of the dry clay. It is important, therefore, that the firing be carefully conducted, and that it should be under proper control. Pyrometers are coming into use for the control of the firing temperature, with a result that a constant and trustworthy product is turned out."

This statement in a nut-shell expresses the importance of the temperature in firing kilns. The question of securing a constant production and trustworthy product, as it is stated, depends on this point.

As I have mentioned before, the temperature at which the brick are fired, governs largely the strength and durability of the product, and this is of particular importance in paving brick, where the rattler test is required. In the manufacture of face-brick where not only the strength but also the color is of the greatest importance, temperature during firing of the kilns plays an all-important part. The consumption of fuel, and the time required to burn a kiln, will chiefly depend on the temperature; and the fuel consumption in the firing of brick kilns offers a greater loophole for unnecessary waste than any other part of the brickmaking process.

In burning brick made from a clay of reasonably good quality and uniformity, and which reaches the kiln perfectly dried, we have three possible sources of trouble. They are draft, time and temperature during burning.

Time of firing each kiln can, of course, be easily determined and reproduced.

The draft is of importance, and can be easily measured by several devices, and there remains only temperature to be controlled. We must then consider what method can be adopted to best control the kiln temperature; and perhaps a brief review of methods which have been adopted in the past, might be interesting.

It is rather remarkable that Wedgwood, a potter in England, in 1782, was the first to occupy himself with methods to determine high temperatures. I say remarkable, because many have implied, possibly with some reason, that the clay industry has been the slowest to adopt modern methods of controlling temperatures, although the problem is one of greatest importance to the clayworker.

The steel works in their heat treating furnaces, the glass plants in their annealing furnaces, and the blast furnaces, have for years controlled their temperatures by pyrometers, and although the clay products manufacturer has been slower to adopt these instruments, the fact remains that it was a pottery manufacturer who first struggled with the problem of measuring temperature, away back in 1782, Wedgwood tried to determine temperature by making test pieces of clay, and measured their contraction under heat. This idea is not



Kittanning (Pa.) Clay Mfg. Co., View of Plant from Hillside.

so radically different from the "trials" as they are called, and used today to a certain extent in potteries.

Cones were also adopted many years ago as a means of measuring temperature. They consist of small forms of clay, shaped like a pyramid, so formed of certain combinations of feldspars, lime and kaolins, that they will fuse at various

melting points. Several of these cones are placed at one point in a kiln numbered, for instance, 10, 11 and 12, with melting points respectively of 2,426°, 2,462° and 2,498°. When the temperature is attained at which cone No. 10 fuses, the point falls over and indicates that this temperature has been reached. The kiln can be carried higher until, for instance, the second cone falls, and the third can be left standing to show that a certain temperature has not been exceeded. Cones are not an accurate measurement of temperature, and this has never been claimed for them, as they are effected somewhat by time and temperature. They can often be flashed down at a lower temperature by a sudden blast of heat, or by fusing in a small electric furnace in an hour's heating instead of several days, as occupied in an ordinary kiln burning, and they naturally do not indicate when the temperature is falling, but only a rising temperature. They have, however, proven of much value as a guide in firing kilns, and they are particularly popular for firing pottery kilns. These cones were first brought into prominence abroad by Seger in Berlin, and his efforts have been carried on in this country by Professor Orton in a very capable manner.

About 20 years ago, pyrometers operating on the principle of the difference in expansion of metals came into use. These were adopted chiefly for the water smoking period, and after a temperature of about 1,000° Fahr. was reached, the pyrometer had to be removed from the kiln.

Portable expansion pyrometers, having an expansion strip of platinum, have also been used to some extent for higher temperatures, but they have had the disadvantage that the instrument had to be cooled off between each test, requiring about twenty minutes before the instrument could be used in the same or another kiln. This type of pyrometer, in spite of its drawbacks, has proven of considerable value at a number of plants in this country.

It has remained for the electric pyrometer to give the clay industry an instrument which fully meets its requirements.

The electric pyrometer takes its name from the fact that it is operated by what is known as thermo-electricity. If you take two wires of any two different kinds of metal, and make a junction of these two wires at one end, and then heat the junction, it will generate a small current of electricity, and this current increases as the temperature is raised. True, the current is very small, but it is sufficient to operate an electrical instrument, known as a millivoltmeter.

For measuring high temperatures, it is only necessary to select wire or metals with a very high melting point, and which, when joined together, generate as much current as possible. For this purpose one wire of platinum, and the other of platinum alloyed with rhodium, are most commonly used. Such a thermo-couple at a temperature of 2,500° Fahr. produces a current of sixteen thousandths of one volt, or sixteen millivolts—a very small current, but sufficient to operate a properly designed instrument.

When these electric pyrometers were first introduced into this country to any extent, some ten years ago, they were too much of the laboratory type of instrument to meet the requirements of most brick plants. The galvanometer or instrument had a pointer carried on a fine wire suspension, about the diameter of a hair, and the instrument had to be carefully leveled and mounted on a brick foundation built up from the solid ground.

It is in the construction of a suitable instrument to overcome these delicate features that the greatest improvements have been made in the past few years, and also in properly designing the thermo-couple, and installing the instruments to overcome the troubles experienced in the past. The instrument as used nowadays does not have the fine suspension wires, as the bearings are jeweled like a watch, they do not require leveling, and practically any wall which will stand up can be used to mount the instrument on.

The thermo-couple of fine platinum wires is seriously attacked if exposed to gases, and to prevent this, it is customary to protect the wires with a porcelain tube through which gases cannot penetrate. These porcelain tubes are naturally somewhat fragile, and where they are inserted in the kiln, it is desirable that a heavy fire brick tube should be used as an additional protection. This prevents the porcelain tube being struck in loading the kiln. The end of the thermo-couple extending outside the kiln, and to which the wires will be attached, by leads to the instrument, should be protected in such a manner that the rain cannot run inside the tube while hot and crack the porcelain tube. Attachments must be used at the outer end of the thermo-couple, by means of which the wires can be readily connected.

We now have the thermo-couple installed properly in the kiln, and I might mention that for round down-draft kilns it has been found best to install the thermo-couple through the crown. This is also true of rectangular and continuous kilns, because more satisfactory results seem to be secured in this manner, and the installation of the thermo-couple through the crown naturally permits of the use of a shorter thermo-couple than if it is installed through the side wall, and, of course, reduces the expense.

The burner who fires the kilns must have an indicating instrument to read the temperature of any kiln, and this instrument must be located at a convenient point so that he will not have to travel too great a distance to read the temperature. It is customary at most plants which use electric pyrometers, to install an indicating instrument amongst a group of four or eight kilns, or where the kilns are located close together, to have one indicating instrument in the head burner's shanty. By means of a switch alongside the indicating instrument, the temperature of any kiln can be read from this one instrument, by simply throwing the switch on to any particular kiln.



The Material Shown Here is Probably the Hardest Ever Handled by a Steam Shovel Without Blasting. This 105-ton Marion Shovel Has Worked Day After Day, Year After Year, Supplying Material to Two Large Paving Brick Plants. Metropolitan Paving Brick Co., Canton, O.

It is generally the case that the burner recognizes that a pyrometer is of advantage to him, and he studies it most carefully, and there is no doubt about it that no matter what other instruments may be used, it is particularly desirable that the burner have an instrument to guide him. Some plants in this country have felt that recording instruments, which keep a record of the temperature in the office, were sufficient,

and that the burner ought to fire his kilns properly, and the recording instrument would simply act as a check. How much better it is to give the burner an instrument to guide him, so that he may study the firing of his kilns, and endeavor to better each burn.

It is also desirable for a plant to have a recording pyrometer in the office, by means of which a record of the temperature of any kiln may be made on a chart. This keeps a check on the burner, and shows up to advantage a careful burner, and equally clearly a careless one. These recording pyrometers, it is understood, are similar to an indicating pyrometer, with the exception that a record chart is placed below the pointer, and a continuous record of the temperature day and night is secured.

At the plant with which I am connected, we have three thermo-couples installed in the crown of each kiln, and we have placed an indicating instrument at a convenient point where the burner can read his temperature.

I have found that we can secure a great deal of information with a pyrometer installation regarding our clay, and its action under fire, which I never appreciated before. For instance, I was surprised to find that our carbonaceous shale coming from clay banks in a coal district, required a temperature of 1,500 to 1,600° before the carbon was expelled.

We have 66 by 16 foot kilns, set 30 brick high. The amount of material in a kiln is equal to 100,000 of 7½ lb. brick. In checking up carefully our coal consumption for the year prior to the installation of the pyrometer, I find we averaged 127 tons per kiln, while for a period approximately one year since the pyrometer was installed, the records show a coal consumption of 117 tons per kiln, a saving of 10 tons at a cost delivered to kilns of $1.60 per ton or $16.00 per kiln per burn.

I am not able to give any figures as to the percentage of firsts secured before and after the pyrometer installation, but I realize we are getting better brick than we made before the installation was made.

Our head burner takes a great deal of interest in the pyrometer and seems to appreciate that it is of benefit to him. Before putting in the pyrometer, I told our superintendent that it was no use putting the pyrometer in unless the burner would use it, so he had a talk with our head burner and I did likewise. The result was that we started right, instead of having an antagonistic feeling at the startoff.

Even though an installation of this kind at a plant should not reduce the fuel consumption, should not even produce better brick, or shorten the time of burning, the fact that one is securing more information than ever before as to the results of the firing on his particular clay, will give one a much more satisfactory feeling than when working in the dark.

There is no doubt but that the modern method of controlling kiln temperatures with an electric pyrometer, the method adopted during the last few years, is the best method which has ever been used to date. There doubtless will be improvements made in methods of measuring temperatures in the future, but we have at least reached a point where devices for satisfactorily measuring temperatures in burning brick can now be procured, and it is something which could not be said a few years ago.

W. C. Green, well known to the western mining and clayworking trade for the past 25 years, and for the past six years representative of the mechanical goods department of the Diamond Rubber Co., died February 13th, from an attack of pneumonia.

Mr. Green's work for the Diamond Rubber Co. will be carried on by C. A. Tracy.

"Digging and Mixing Clay—One Operation"

The Marion Steam Shovel Co., Marion, Ohio, has in its latest catalog, "Digging and Mixing Clay—One Operation," struck a unique note in advertising. Unique, because it does not confine itself wholly to speaking of the merits of Marion shovels, but gives information of a positive nature: information that informs.

For example: illustrations well chosen, supplemented with terse, snappy description, show just how the "Clayworkers' Shovel" is used, under varying conditions of high and low banks, and digging in both soft and hard clays and shales.



Here is the Smallest Marion—a Model 28—Digging Extremely Hard Shale Without Blasting. Note How Well a Self-Propelled Traction Machine Fits These Requirements. Latrobe Brick Co., Latrobe, Pa.

The mixing of the material, digging below grade, loading to any level above or below grade, and all this with numerous types and sizes of shovels is shown graphically, and can not help but make the steam-shovel*less* manufacturer wonder "wouldn't that reduce my costs too?"

For the manufacturer who already believes in the economy of digging with a shovel, the latter part of the pamphlet is devoted to descriptive detail of the shovel mechanism. Send for it, you cannot afford to be without it, even though you are not ready to purchase.

Increases Capacity

The Richlands Brick Corporation, Richlands, Va., is now installing a second 9 ft. American dry pan, with two new American 32 ft. elevators; and the following machinery manufactured by E. M. Freese & Co., Galion, Ohio: GC brick machine, C40 rotary automatic cutter, P-30 12-ft. pugmill supported by steel framework, E-18 disc clay feeder, also waste conveyors and elevators to take care of all waste from cutter, etc. It is also building seven additional tunnels to its waste heat dryer, and four additional 30-ft. round downdraft kilns. The daily capacity of the plant will be increased from 50 to 75 M. brick for the present, and probably a little later on to 100 M. per day.

The Gibb Instrument Company

Announcement has recently been made by W. H. Gibb, of the incorporation of the Gibb Instrument Co., Pittsburgh, Pa., for the manufacture and sale of thermo-electric pyrometers, potentiometers, and the pyrochronograph—an invention for taking open hearth temperatures.

Mr. Gibb is well known in the industry, and his broad knowledge and years of practical experience insure him success in his new venture. The offices of the company are located in the Highland Building.

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff Strongest and most durable

Manufactured by

C. K. WILLIAMS & CO., EASTON, PA., U.S.A.

Correspondence solicited

H. M. DEAVITT, *Ceramic Chemist*

209 South LaSalle Street, Chicago

Best equipped consulting laboratory in the West for the analysis of clays and clay products.

Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.

Expert examination of deposits and plants a specialty.

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

Our business is diagnosing and remedying

TROUBLES

of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult

H. & B. COPPING, Kankakee, Illinois

We personally do the work.

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

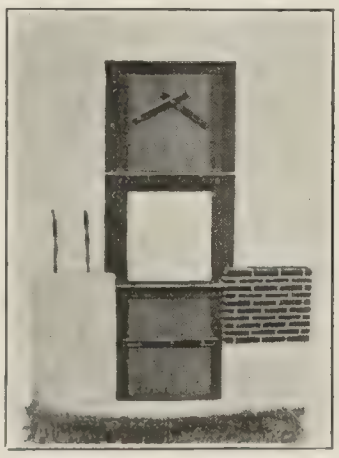
ZOOK SILO FRONT

It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.



G. W. ZOOK

BUFFALO KANSAS

Designed and Built for Satisfactory Service

The American No. 292 repress, designed for repressing paving block, building brick and fire brick, is high class in every detail. The American Clay Machinery Co., manufacturers, recognizing the demand for a better repress, conducted exhaustive experiments with the object in view of not only meeting present requirements, but future requirements in this line. Three different designs of represses were built and thoroughly tested out, and the No. 292, shown in the accompanying illustration, was selected as the best.

The first machine of this type was shipped to the C. P. Mayer Brick Co., Bridgeville, Pa., November 20, 1913, where it was promptly installed, and has been inspected from time to time. From the first it was a success; in fact, Mr. Mayer noting the smoothness of all the movements, formed the impression that the machine was capable of running at greater speed. He accordingly made satisfactory arrangements with the men operating it, and since then has done all his repressing on the one machine, instead of the two older machines formerly used. Its daily average is approximately 30,000 paving block, although it has made a record as high as 32,805 paving block in 9 hours and 40 minutes, and indications are that it could be run at still greater speed, if the men could keep it supplied with material.



No. 292 American Repress

The machine has stood up under severe service and does good work; the mechanical movements are very simple, the number of parts being cut in half by dispensing with those that are wholly unnecessary and combining the base side frames and cross ties in one piece, resulting in a machine that is highly satisfactory from every point of view. All wearing surfaces are large and parts are easily accessible for adjustment or renewal. Ample provision is made for lubrication and wearing parts are well protected from dirt.

There are now 16 of these represses in operation, and anyone interested can secure further information by writing the American Clay Machinery Co., Bucyrus, Ohio.

Cutting Wires and Screen Wires

Stiff-mud brick manufacturers have long fought the broken cutting wire nuisance, and also that machine room pest, the wire that slips, gets longer and cuts a crooked piece of ware.

Ordinary wire as usually purchased was so brittle and hard that it was impossible to twist the wire at the loop; it could only be wrapped, hence all but one ordinary tension caused slipping and consequent lengthening of wire. This loose wire, in addition to cutting a series of crooked brick soon broke, due to catching on platens.

The annual loss from this source of broken wire, crooked brick and lost time is enormous and greater than most brick makers think, unless they have taken the time to accurately compute it from the loss occuring in a stated interval.

Specialty Wire Co., of 2021 Clybourne Ave., Chicago, have evolved a machine that will both twist and wrap these wires so that it becomes an impossibility for the wire to slip. The wire is of a soft grade of steel, so chosen because the fibre of the wire is not broken and deranged in the twisting process yet it has a high tensile strength. The breaking point of the loop is within twenty pounds of the tensile strength of the steel wire used.

Wire of equal quality but harder, is furnished for screens, both classes of wire, cutting or screen, are furnished as noted on the front cover advertisement of the March 2nd issue of "Brick and Clay Record;" and these wires are sold in correct lengths either looped or in coils. The Bach Brick Co., of Chicago are users.

An Improvement in Cling-Surface

Engineers who have treated their belts and ropes with Cling-Surface unanimously agree on the benefits therefrom, but have regretted the necessity of heating Cling-Surface.

To overcome this objection without impairing Cling-Surface efficiency has long been the aim of the manufacturers, Cling-Surface Co., Buffalo, N. Y.

Cling-Surface as now sold, however, has been converted to a semi-fluid ready for instant use at any temperature above 60° F. In other words, no heating is required anywhere during eight to ten months of the year, nor in the winter if Cling-Surface is kept in warm rooms; where kept in a cold room or exposed to winter temperature, it need not be heated above 100° F. (hand warm) and then only a few minutes for softening.

The improvement greatly simplifies application and its more extensive service. A 15 to 18-inch stick with a 2-inch strip of cloth secured to the end, dipped into Cling-Surface of ordinary house temperature, and the excess wiped off on the edge of the can, may be used to swab the face of the belt. The pulleys in turn distribute and work it into the belt fabric. Applications are repeated in this way until the belt is filled with the Cling-Surface, when further applications are required only at intervals.

Incidentally, this method of handling is another step toward "Safety First." In contrast to almost universal practice with other methods of belt management, which require thrusting an arm between the sides of a rapidly moving belt, a man can use a stick two or three feet long if he desires, and stand to one side where his hand or clothing cannot get caught on a rivet, hook or other projection from the belt face.

Smiles Made to Order

That, "Book of Smiles" a compilation of acid and basic "stuffs" calculated to dry your tears, smooth out the frowns and put grins where all grins ought to be, is loose in the mails again.

That "book" without a definite aim in the world, except the

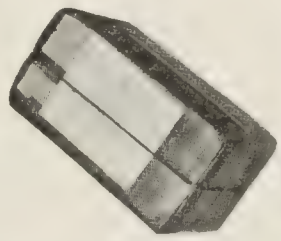


Whether the drive is leather, canvas, rubber, rope, top-pull, bottom-pull, vertical, quarter-turn, crossed, cold, hot, dry, wet, short, long, large or small, makes little difference. Cling-Surface treatment improves them all.
Why not try some on YOUR drives?

CLING-SURFACE CO 1029 Niagara St **Buffalo N Y**

82

First Impressions



If your sample brick are received in bad condition, it may mean that your competitor gets the order.

First Impressions Are Lasting

Be on the safe side—use the Hinde-Dauch Corrugated Container—manufactured for your convenience. Write for samples.

The Hinde & Dauch Paper Co.
Sandusky, Ohio

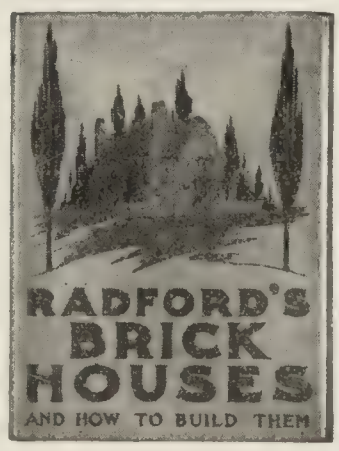


THE IMPORTANCE OF DRAFT CONTROL IN BURNING

Cannot be overestimated. For many years we have made the

Best Draft Gages for Kilns.

The Ceramic Supply & Construction Co.
COLUMBUS - - OHIO



Brick Houses
And How to Build Them

A book containing 219 (8x11 inch) pages illustrated by over 300 designs and details of brick house construction, beside perspective views and floor plans of 82 brick houses with estimates of cost construction and miscellaneous data about the use of brick from its manufacture to its placing in the building, including ornamental brick and tile work, sewer construction, fireplaces, brick veneer construction, arches, cements and mortars, how to estimate the cost of brick construction, etc., etc.

The houses shown are all of artistic design drawn by leading architects and show what can be accomplished by the use of brick as a building material.

Price, Postpaid $1.00

Book Department *Brick and Clay Record* Chicago

Cutting **WIRES** Screen

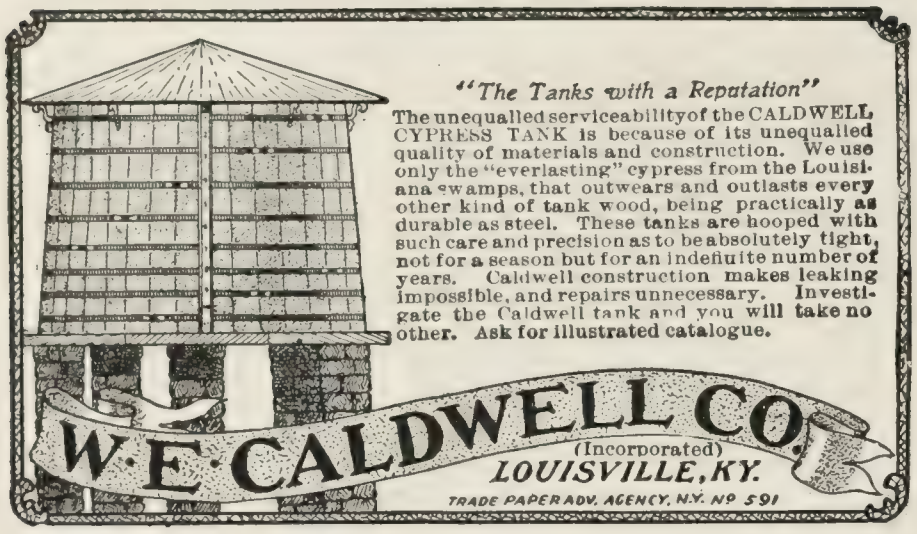
Tough Twisted—Wrapped Strong

ANY Size or Length **IN** Coils or Looped

We sent YOU a letter on the front cover of the March 16th issue of this journal. Did you read it?

Specialty Wire Co.

2009-21 Clybourn Ave. Chicago



Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY
1229 Insurance Exchange Bldg., Chicago

General Traffic Association

Incorporated

Woodward Building, Washington, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

manufacture of thoughts and grins, takes shots at Noah, R. H. Davis, a scarecrow, Chinese politics—all with equal fervor and startling accuracy.

Only in an incidental manner, is attention called to the advertisement of the Standard Dry Kiln Co.

It is typed across two pages, in emulation of the two page-inside spread advertisements, in its contemporary the Saturday Evening Post. If you don't get your copy it is because the postman steals it. It's free for the asking, from The Standard Dry Kiln Co., Indianapolis, Ind.

Price Electric Pyrometers

The burning of clay ware plays a most important part in its manufacture, and the necessity for accurately indicating and recording the heat of the kiln at all times, in order that it might be controlled, has long been recognized. For this purpose pyrometers are coming to be used more and more generally.

The Price pyrometers claim a number of points of superiority over other types. The record on the paper is made by means of an electric spark, which jumps from the end of the needle through the paper, burning a series of small holes. The needle itself does not touch the paper at any time, and thus the operation of the instrument cannot be retarded by the needle rubbing on or sticking to the paper. The recorder has also been designed to eliminate as far as possible the necessity of daily adjustment, has high internal resistance; and the recording paper is in a continuous roll of about six months supply.

The Price instrument is so constructed that it automatically indicates and records the temperature of one or as many as 12 different kilns at one time on one sheet of paper. The needle moves automatically from the temperature of one couple to that of another, and as the spark occurs at regular intervals, a record of each temperature is obtained.

Additional information may be secured by writing to the Price Electric Co., 12367 Euclid Ave., Cleveland, Ohio.

Summit China Company Changes Hands

The Summit China Company, of Akron, Ohio, is running full time and has orders on hand sufficient to keep the plant busy for several months. The new owners, George H. Bowman, C. T. Brooks and associates, of Cleveland, secured Charles W. Bowman and E. R. Colclough, of East Liverpool, Ohio, to take the positions of works-manager and business-manager, respectively.

C. T. Reddrop has charge of sales, and these three form the management. A great many improvements have been made to both plant and product, and others will follow as quickly as possible. The expenditure of a considerable amount of money has been authorized by the board of directors, and with it a new biscuit kiln of the up-and-down-draft type, a new frit kiln for preparing glazed materials, and the installation of a gas burning apparatus to supersede coal will be made. A new office building will be built which will contain a large sample room. Additions are to be made to the warehouse and decorating departments, and a new plain shaped dinner service will be manufactured, models for this having been delivered during the week of March 15.

It is reported that a new combination up-and-down-draft pottery kiln has been brought to a high state of perfection by some English inventors, and that this is the type which will be installed by the Summit China Company of Akron, Ohio.



SHARP CHANGES for the better have occurred in all parts of the country. They affect practically all lines. March building reports, based upon returns up to March 25, indicate that one hundred leading cities of the country will show a volume and value of plan filings entirely equal to that of the first quarters of 1914, 1913, 1912 and 1911.

If the same rate of projected buildings were maintained until the end of the month, there will be shown, when all reports are in, an actual gain in the demand for building material over the best previous record in the last four years.

Philadelphia, at the end of the fourth week in March, had passed in volume and value the best record for new building projection in four years. New York's first quarter in 1915 will be considerably in excess of the first quarter's plan filing for the past two years. Boston will recover much of the decrease of February and January, and Chicago will show a sharp recovery.

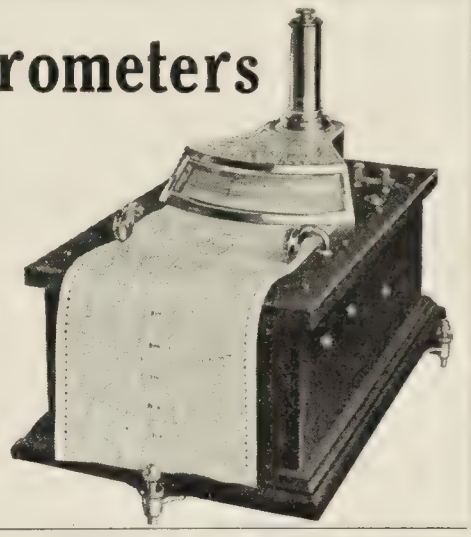
Building material prices have long since reached their lowest level. The up-turn is now well under way in all parts of the country save in the South, and even there a stiffening tone is noted, based upon inquiries coming into architects' offices.

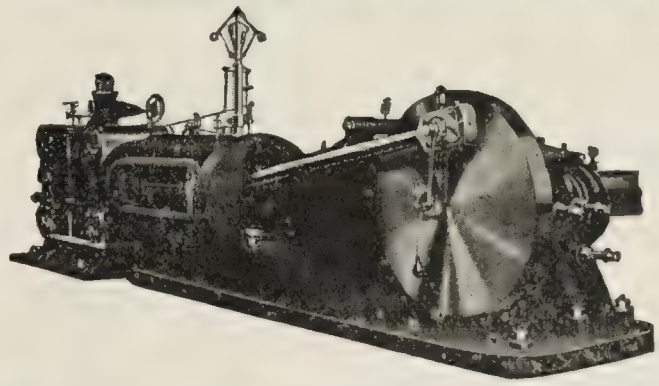
New York, where the price situation has been discouraging since the first of the year, is reporting higher prices in common brick, structural steel, plate and window glass, lath, pine, spruce and all the hardwoods, Portland cement, wire-lath and bars for concrete reinforcement. Lime, which was the last to reach low levels, is now reporting a stiffer undertone. Roofing material is extremely active in an upward direction, especially in asphalt material, owing to the difficulty of getting boats to carry crude material from South America.

Brick machinery manufacturers say that there is an increasing inquiry for new appliances that will help further to reduce the cost of brick making. It seems apparent to many brick manufacturers that the day of really high prices for common brick has passed into history. The manipulations with which Portland cement is sold in leading cities is responsible, more than anything else, for the ascendency of this material, and, in order to meet this peculiar form of competition, it seems up to the brick manufacturer to keep his price as low as possible and to protect his margin by intensive brickmaking methods, which include the installation of improved labor-saving machinery.

The situation in New York at the present time is es-

Increased Efficiency *Greater Economy*
Results obtained from use of
"Fuller Quality"
Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.
Write for Fuller Quality Products Catalog No. 50-A
Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

Efficient Pyrometers
Have you an accurate record at all times of the heat in your kilns, permitting you to control the burn and assuring you perfect and uniform ware? The Price Pyrometer will do this for you. Let us tell you about its advantages.

The Price Electric Co.
12367 Euclid Avenue
Cleveland, Ohio

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS

Send for Catalogue No. 65-B
Murray Iron Works Co. Incorporated Feb. 1, 1870 **BURLINGTON, IOWA**

"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
Offices: Steubenville, Ohio
Mills: Newark, Ohio
BUCKEYE MEANS BEST
BEST MEANS BUCKEYE
All Sections from 12 lb. to 40 lb. per yard
Write or wire us, when in need.
No order too large to handle promptly or too small to secure immediate attention.

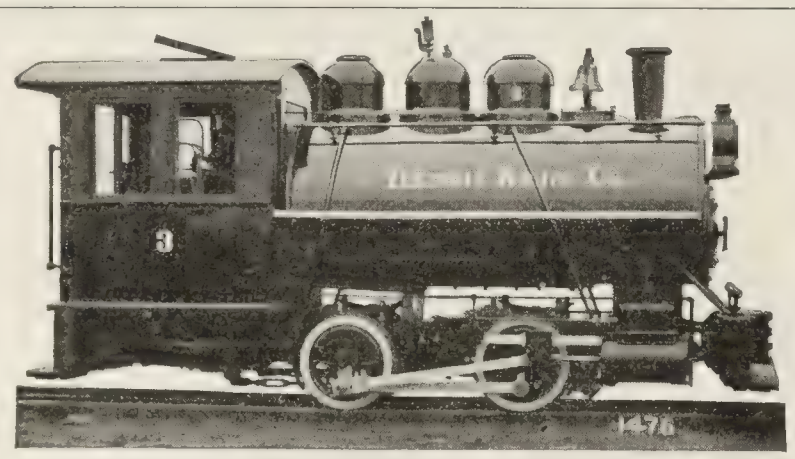


Pyrometer Caution

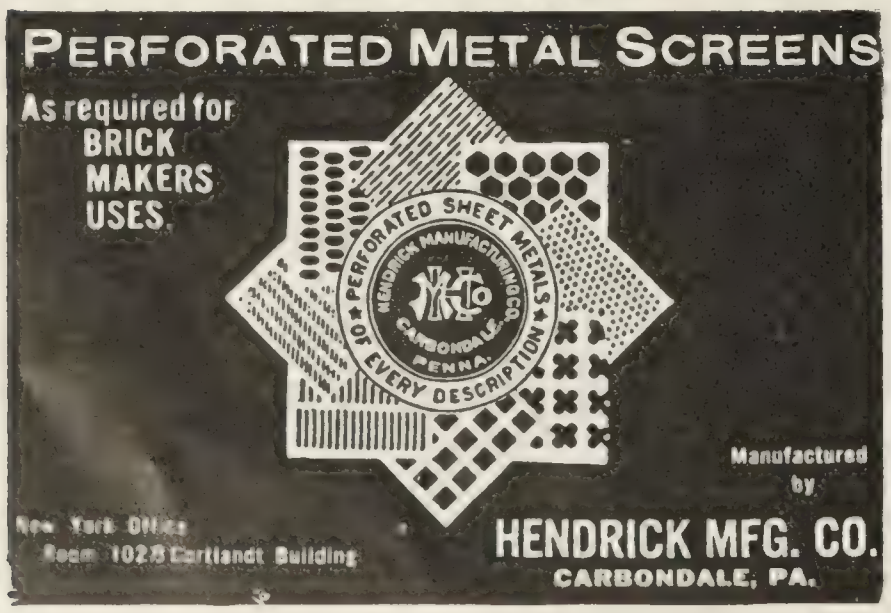
Be careful in the selection of a pyrometer. There are startling reasons why. Read them in our "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa.

300 lbs. of slack coal per 1,000 brick
are usually required in
THE KLOSE KILN
Cheap in construction and economical in operation. Adapted for small and large capacities.
Write for particulars and references
K. W. KLOSE, 4239 Benton Blvd., Kansas City, Mo.



Davenport Locomotive Works,
Davenport, Iowa



pecially enlightening. Through a personal difference between officials of the Atlas Portland Cement Company and the Lehigh Portland Cement Company, and perhaps further aggravated by price-cutting tactics of several smaller companies, the mill-price of this commodity, coming out of the Lehigh Valley district, has been reduced in the last three months from ninety cents to as low as fifty-eight cents. Cement in the Lehigh district costs seventy cents to make.

So it is apparent that mills have been losing about twelve cents a barrel on every barrel shipped. The result is, that every dealer in New York has been unloading his supply of brick and loading up with Portland cement at $1.23 instead of $1.58 a barrel, the latter price ruling prior to December 1.

That alone would be enough to worry the brick interests, but a far more sinister situation has developed. It is the question of team delivery by cement manufacturers. While the situation is peculiar to New York at present, the formation of a $25,000,000 cement corporation by Edward M. Hagar, former president of the Universal Portland Cement Company, which contemplates the operation of a great number of cement plants, each covering a radius of 200 miles, and stretching from the Pacific to the Atlantic and from the Gulf to the Great Lakes, opens the way for similar conditions throughout the country.

For years, the building material dealers of New York have had an understanding, whereby the dealer who is to supply the brick to a building will also supply the cement for the mortar. In order to facilitate matters, the architect specifies the kind of cement to be used and the dealer passes the order on to the cement manufacturer's agent, who in turn ships the cement to the rail terminal and teams it, using his own equipment from the railroad yard to the building site. The cement company bills the agent, the agent bills the dealer and the dealer bills the contractor.

This arrangement left the contractor paying the dealer's profit on the cement he used in putting up the walls. But the sub-contractor, laying the cinder concrete floors and putting in the foundations of reinforced concrete, was not bound by any obligation to buy the cement he used from the dealer who supplied the brick for the superstructure. In point of fact, he could go direct to the cement manufacturer and buy cement cheaper than the general contractor of the building could buy it for, if it were to be used for laying up the brick walls.

The dealers have an idea, looking well into the future, that if the cement companies are to be permitted to deliver cement with their own trucks to jobs, it will not be long before the cement manufacturers will be selling their material direct to contractors and sub-contractors, and the day of the dealer's usefulness will be ended.

Brick manufacturers who are sitting back complacently, with the idea that the brick dealer can fight his own battles against cement without any nation-wide help, will soon have another think coming their way. For it seems to be the avowed purpose of the new cement combine to so place itself with relation to distribution, that it will be a simple matter to duplicate the conditions that are now giving common-brick dealers and common-brick manufacturers of New York considerable concern.

If there has been any cause for wonderment as to why cement has been making inroads upon the brick industry, and why the late convention was so conspicuous by its reference to a united publicity campaign, the answer is right here. The need of the hour is for the brick manufacturer to stand behind the dealer, just as the manufac-

turers of every other commodity, from tooth-powder to tobacco, stand behind the men who sell their goods, and help them to safeguard the retail end of the business. The brick manufacturer needs the dealer more than the cement manufacturer does, and it is to his interest to put off, as long as is humanly possible, the day when the dealer is eliminated. "Big business" displays a tendency in this direction, but the brick manufacturer has a long way to go before he can safely adopt all of the examples set him by leaders in other lines.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

CALIFORNIA

The Crockett Sugar Refinery, at Crockett, Cal., will build a large addition to its refinery.

P. J. Sullivan, San Francisco, has secured a contract to supply to the city of San Francisco glazed tile for partitions in the new addition to the public hospital.

W. W. Dennis, manager of the McNear Brick Company, San Francisco, reports that some good business is being offered locally.

An additional contract has been let for paving brick to be used on Powell street, San Francisco. The present contract is for brick to be used on the hill section of the street from Sutter to Bush Street.

Gladding, McBean and Company, San Francisco, manufacturers of brick and terra cotta, have been awarded a contract for the architectural terra cotta to be used on the new San Francisco branch public library.

The California Academy of Sciences, San Francisco, has let the contract for brick and other building material for the Academy of Sciences, to be erected in Golden Gate Park, to Farrell and Reed.

The city of Berkeley, Cal., will ask for bids on the material for two schools and its new post-office, within the next sixty days, and the city of Petaluma, Cal., will build a high school that will require 500,000 common and 130,000 face-brick.

The Richmond plant of the Los Angeles Pressed Brick Company, Los Angeles, Cal., which has not been in operation since December 31, has been reopened. The plant will begin the manufacture of brick to fill a large number of orders which have been secured and which, it is stated, will be sufficient to keep the plant busy for several months.

The Shell Oil Company is to do some heavy construction work at Martinez, Cal., which will require a million and a half of brick during 1915. They will build an addition to their refinery, a pumping station and pipe lines in that section. Should war activities cease, this same company will use not less than a billion and a half of brick.

One of the attractions in the Food Products Building at the Panama-Pacific International Exposition, at San Francisco, Cal., is the specially designed tile floor of the exhibit booth of Walter Baker and Company, chocolate

"Clinton" Brick and Mortar Colors

Insist on seeing this label

Unusually strong in pigment. Positively warranted not to wash out, "streak," or fade. Recognized everywhere as the standard of Brick and Mortar Colors.

Full particulars and prices gladly furnished.

Insist on the genuine "Clinton" colors made only by

Clinton Metallic Paint Co. Clinton, N. Y.
P. O. BOX 38

CARS

Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

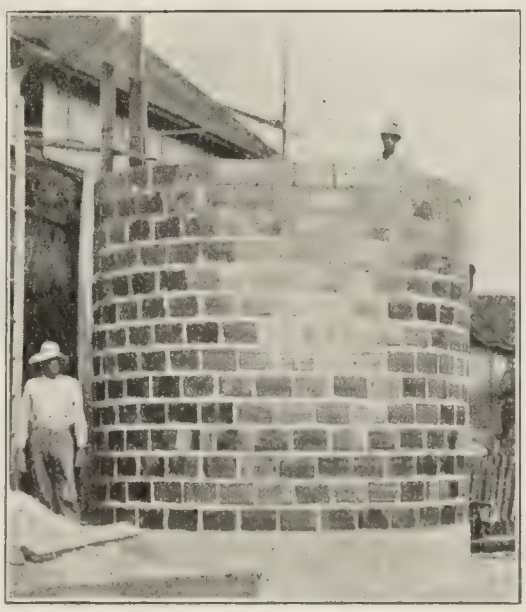
We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS CARS CARS

Do you make Silo Blocks?

Why Not?



There's lots of money in it if you make the right kind.

DURO
Everlasting Clay Block Silos

will increase your income.

Note the Vertical Rod in Door Frame.

Construction is simple, yet it makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.

MOWRYSTOWN BRICK & TILE CO.
MOWRYSTOWN, OHIO

SAVE DOLLARS IN THE PIT
BLAST WITH
DU PONT
LOW FREEZING
EXPLOSIVES

A FEW charges of explosives properly used in the clay pit brings down masses of clay in condition for quick, easy and cheap handling.

The leading brick makers are cutting down brick-making costs because the clay is now handled easier and faster since the blasting plan was adopted.

Why not try in your pit this dollar-saving method?

For information about explosives for clay blasting write to Dept. 419.

DU PONT POWDER CO.
Established 1802
WILMINGTON - - - DELAWARE

POSTERETTES



160,000 of these stamps have been used by brick-makers throughout the country. As many pieces of mail, and express matter, have carried the "Build with Brick" slogan. It is printed in bright colors and "catches the eye."

How about your using some of them? It is an inexpensive way of advertising your material.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO

manufacturers. The border tiling in the floor shows in colors the leaves, blossom and bean of the cocoa plant.

DELAWARE

The Eastern Refractories Company, Wilmington, Del., has been incorporated with a capital stock of $1,000,000 for the manufacture of brick and tile. S. H. Burke, B. H. Friel and L. S. Dorsey, of Wilmington, Del., are the incorporators.

DISTRICT OF COLUMBIA

George W. McNees, of the Kittanning (Pa.) Clay Manufacturing Company, was in Washington about a week ago.

West Brothers Brick Company, Washington, D. C., has recently purchased about twenty-five mules, in addition to its regular number. L. Perry West has been away visiting Baltimore, Fredericksburg, and Philadelphia.

Brick dealers in Washington are a unit in their belief that investors and real estate men will take advantage of the labor market, and "Build Now and Save." Anticipating a heavy demand, the brick manufacturers have been running nearly "full time" all winter and are now in a position to make quick deliveries and in large quantities. This also has a tendency toward lower prices.

The Washington, D. C., office of the Hydraulic-Press Brick Company reports a contract for furnishing 350,000 face-brick to the George A. Fuller Construction Company, for the addition that is being made to the Munsey building in the Capitol city. A further addition will be added within a month or so, the adjoining property just having been acquired. The same office reports the contract for furnishing 70,000 red standard brick for the new Alexandria (Va.) High School.

Preliminary plans are under way for the organization of a section of the Builders' and Manufacturers' Exchange, of Washington, D. C., to be made up of brick manufacturers and brick dealers. Practically all of the brick manufacturers are interested in the new organization, and it is expected that the dealers will come in as soon as the first details are made public. Charles Welsh, secretary of the Exchange, is co-operating with the heads of the brick manufacturing establishments of the District and with some of the brick dealers, in the plan of organization.

Manufacturers and dealers in building material, who are members of the Builders' & Manufacturers' Exchange, of Washington, D. C., have recently started an agitation to have the District Commissioners begin, as soon as possible, the construction of the buildings authorized by the last session of Congress. A committee of the Exchange recently waited upon the Commissioners and left the following letter:

"The undersigned were appointed as a committee to communicate with your honorable body in reference to the plans and specifications for construction work to be done by the District of Columbia and to urge that you expedite, as far as possible, the issuance of such plans and specifications. Our reason for calling your attention to this matter is the fact that many of the best mechanics in the various construction lines are out of employment now and have been the best part of the winter; they are, consequently, badly in need of work. Many of the contractors of Washington are doing very little, and it is a well known fact that under such conditions, figures for construction work are based on smaller profits and lower prices for material. It is our opinion that figures on such work will be at least ten per cent less at this time than can be obtained four months hence, which means a rela-

tive saving to the people of the District of Columbia. This is in keeping with what is being done in various states and cities. Recently the Governor of Ohio urged the departments of Columbus, the cities and counties and individuals of his state, to do such work with the least possible delay, for the double purpose of giving work to the unemployed and of saving the state's money."

GEORGIA

The Georgia Brick Company, Adairsville, Ga., has resumed the manufacture of brick at its plant after having been shut down for several months.

Rutherford and Company, a newly organized concern of brick manufacturers, has begun operations at its plant in Hamburg, Ga. The new company, which was organized last December with a capital stock of $60,000, takes its name from the old and widely known brick manufacturing plant in Hamburg formerly known as the W. J. Rutherford and Company plant, where brick have been made since 1852. In taking over the old plant, the new company tore down and rebuilt the machine room, adding new equipment, but the kilns and dryers of the old plant, which have been modernized, will still be used. For the present only a building brick will be made, but later fireproofing will be added to the company's products.

ILLINOIS

The Abingdon Clay Company, Abingdon, Ill., has been incorporated with a capital of $40,000, to mine quarry and excavate silica sand, silica rock and kaolin. The incorporators are George E. Dierssen, Samuel S. Holman and Mary G. Kelly.

John Wilcox and Sons, who own a brick and tile plant about two miles north of McLean, Ill., have asked the Chicago and Alton Railroad Company to put in a siding to connect their plant with the main line of the Alton. The installation of this siding would enable the Wilcox company to load its tile on cars at the plant instead of having to haul them to McLean, and so reduce considerably the cost of handling the tile. This arrangement would also work favorably to the company on incoming shipments, such as coal, which could be unloaded at the plant instead of having to carry it by wagon from McLean, a distance of two miles.

INDIANA

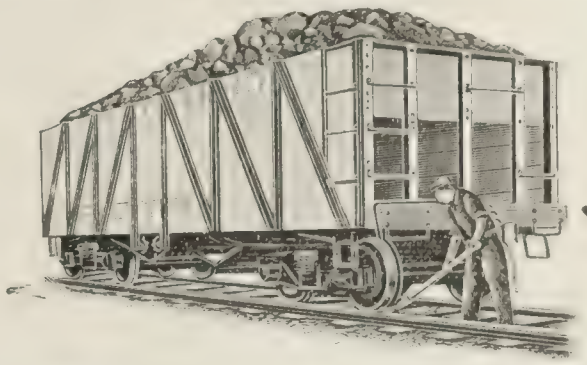
The Brazil Clay Company, Brazil, Ind., has issued $50,000 worth of preferred stock.

After being idle since last November, the Montezuma Brick Company, Montezuma, Ind., formerly known as the Marion Brick Works, resumed operations during the second week in March. Common brick is being made at this plant for which the Western Brick Company, of Danville, Ill., has the exclusive agency.

Organization of the $30,000 Lima Brick and Tile Company, Logansport, Ind., which was recently incorporated to manufacture and deal in brick and other clay products, was completed recently when A. McPheron was named as president and general manager of the company, and Byron S. Langan as secretary-treasurer. Prior to its incorporation and reorganization, the company produced a wire-cut brick, but with the new equipment in which it is about to invest, a soft-mud brick will be manufactured and placed on the market. When completed, it is expected that the plant will have a daily capacity of 50,000 brick.

The new Indiana Workingmen's Compensation Act, which has been signed by Governor Ralston, and which goes into effect September 1, 1915, brings under its opera-

When I put my shoulder to the wheel something is bound to move



Helper Bill told the boss, "It's no trick at all to move one of the big 50-ton cars since I came on the job. Before, he says, they had to call the whole gang of ten men to even move an empty one and would wait for the switcher to spot a loaded car.

$4.00 Hires Me For Life,

Yours for moving cars

"IDEAL" Car Mover

P. S. Send for me for trial—no obligation to purchase.

We specialize in clay plant equipment, including elevators, screens, cars, track, switches, etc.

Write today for our Catalog

H. B. SACKETT SCREEN & CHUTE CO.

1681 Elston Ave., Chicago

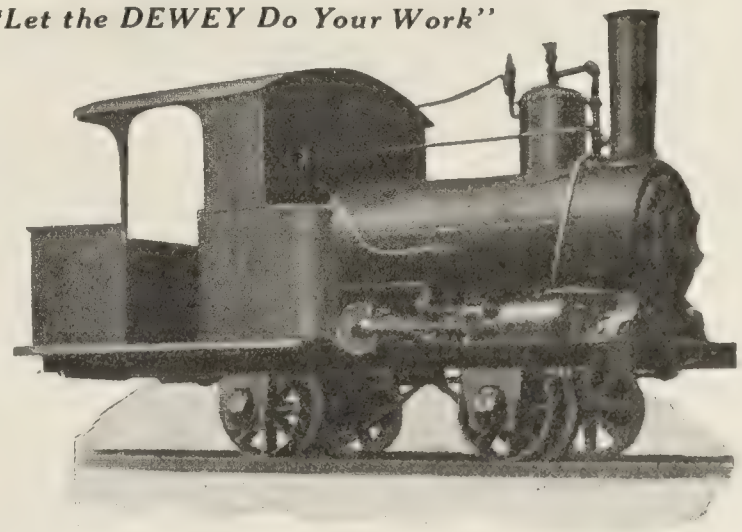
Branch Warehouse:
191 Medford Street, Charlestown, Mass.

SACKETT 1685 ELSTON AVE. CHICAGO

SACKETT 1685 ELSTON AVE. CHICAGO

$1200 Buys a Dewey

"Let the DEWEY Do Your Work"



And no matter how much more you might pay, you wouldn't get anything better—dollar for dollar. The Dewey is far ahead of any other locomotive on the market. Let us prove it—a card will bring the truth.

DEWEY BROS., Goldsboro, N. C.

"NUGGET"

Bearing Metal

FITS YOUR LADLES

Guaranteed
MOST *Economical and Efficient*
For
Brick and Clay Working Machinery
Because
Exhaustive research and practical tests have proven that its hardness assures great wear resistance—its high compressive strength enables it to withstand heavy duty. Why don't you let us prove it?
Price, 15 cents per pound, delivered.

Manufactured Solely by
The Cleveland Alloys Co.
Bearing Metal Experts
CLEVELAND OHIO

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA.- CHICAGO, ILL.

Don't Take the Risk

If you make a good brick, why endanger its reputation by permitting the use of an inferior cement? Good brick should be set in good mortar and GOOD mortar is made of good cement.
A paving block doesn't get a fair chance if imbedded in poor concrete or set in an uncertain cement.

Lehigh Portland Cement Is Dependable

Its mixture is uniform—high in strength—the same in color and fineness, and helps make permanent buildings and ever-lasting pavements.

LEHIGH PORTLAND CEMENT

tion "every employer and every employe"—with several exceptions specifically stated—who is not engaged in interstate or foreign commerce. The principal exceptions are casual laborers, farm or agricultural laborers, domestic servants and their employers. There are provisions whereby even these employers and employes, by voluntary agreement, may be brought under the act.

Every employer and employe, except those specified, shall be presumed, from the time the law takes effect, to have come under its operation and to pay and accept compensation for personal injury or death by accident under the new system established by the state. Any employer or employe, however, may exempt himself from the operation of the act by notice according to a specified form which, however, must have been given thirty days prior to any action unless the person has not been in the employment thirty days. In that event notice of exemption must be given at the time of employment. A copy of the notice of exemption from the operation of the law must also be filed with the state industrial board, which is created by the new law. Either an employer or employe who has exempted himself may, by proper notice, at any time waive such exemption.

The law provides that every employer who accepts the compensation provision of the new law shall insure the payment of the compensation. While such insurance remains in force, he or those conducting his business, shall be liable only for compensation provided by the act. When the employe brings himself under the operation of the act, he automatically "surrenders all other rights and remedies at common law, or otherwise, on account of injury or death." The new law, however, does not relieve any employer or employe from penalty for failure or neglect to perform the requirements of any statutory law. The law provides that no compensation shall be allowed for an injury or death due to the employe's wilful misconduct, including intentional self-inflicted injury, intoxication and wilful failure or refusal to use a safety appliance, or to perform a duty required by statute.

Section 10 of the law reads: "Every employer who elects not to operate under this act shall not in any suit at law by an employe to recover damages for personal injury or death by accident, be permitted to defend any such suit at law upon any one or all of the following grounds: (a) That the employe was negligent; (b) That the injury was caused by the negligence of a fellow-employe; (c) That the employe had assumed the risk of injury.

IOWA

Earl F. Bridges, formerly city engineer for Oskaloosa, Ia., has resigned his position to become manager of the Oskaloosa Paving Brick Company.

The Sioux City (Ia.) Brick and Tile Company has just closed a contract for 150,000 face-brick and 500,000 common brick to be used in the construction of the new Elks' Club at that point.

The Flint Brick Company, Des Moines, Ia., has been incorporated with a capital stock of $100,000 for the purpose of manufacturing and selling brick and other clay products. H. F. Graefe is president, and E. A. Brecht is secretary of the company.

The Morrison Tile Works, Morrison, Ia., reports a steady business. W. D. Reynolds, owner of the concern, states that there is every indication of a good demand for drain tile this year. In fact, he believes that there

will be more farm lands drained this year in his territory than for some years past.

KENTUCKY

The Louisville Builders' Supply Company, through A. E. Livingston, reports an excellent demand for all the clay products the company handles, and states that the company is making deliveries on numbers of small jobs.

George H. Fiedler, general manager of the Coral Ridge Clay Products Company, Louisville, reports that the plant is operating to capacity and that its brick is in good demand. Mr. Fiedler said that the company had orders enough on hand to keep the plant running steadily for five or six months.

Theo. Bishop, of the Southern Brick and Tile Company, Louisville, is still pushing his tiling campaign among the farmers of the state who can be reached from Louisville. Shipments of tile are being made by the company daily, and it is also reported that the demand for brick in the state is excellent.

The Hegan Company, of Louisville, has recently secured the contract for a tile fountain to be erected in the display room of the DeSoto Springs Company, of Hot Springs, Ark. This fountain is to be constructed entirely of tile, that material being decided upon after the management of the hotel had searched the entire country for something that would best answer the purpose.

The contract for the new six-story bank and office building, for the Commercial Bank and Trust Company of Alexandria, La., has been let to Nicol, Langford and Johnson of Louisville, Ky. The building will cost $120,000 and the banking room will be fitted out at a cost of $15,000. The building will be of fireproof construction throughout, brick with terra cotta trimming being used.

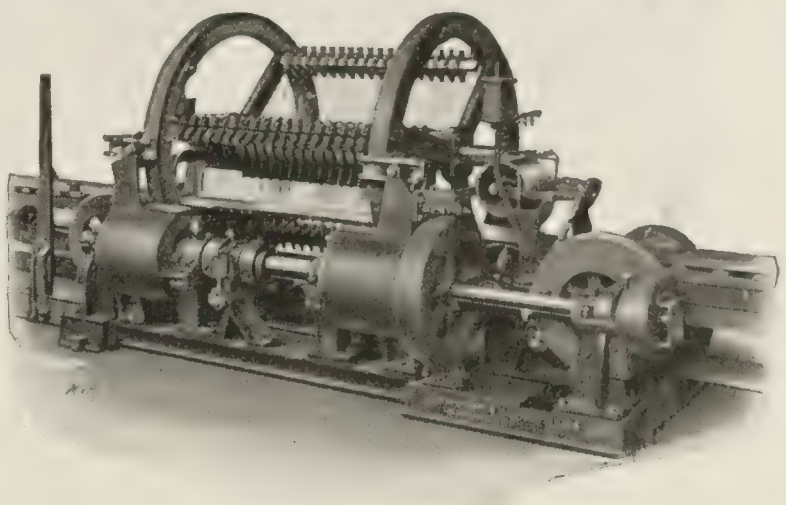
The Brecker-Buck Company, Louisville, has just completed moving from Walnut street to its new store on Market street, where business is coming readily. One of the veterans on the staff of the company is Noah P. Melton, fireplace and chimney "doctor." He probably knows more about the inside of Louisville's chimneys than any other man in the Ohio River Valley, and is consulted on all occasions by those who are in trouble.

Brick manufacturers and dealers in Louisville, Ky., generally report a steady improvement in business. The manufacturers say that they have sufficient orders ahead, or deliveries, to keep their plants busy for several months, while the dealers have closed some good sized contracts. Although the city building inspector reports that the total volume of permits shows an increase over the same period of last year, it is interesting to note that a greater part of the proposed operations are for large buildings.

At Maysville, Ky., the city is preparing to construct about six miles of brick paving this summer. A large tobacco warehouse and other buildings in the city will open the way for building brick during the coming season. The town is located on the Ohio river, about sixty miles above Cincinnati, and has rail connections by way of the C. & O. and the L. & N. lines. An engineer from Newport, Ky., has been engaged to run the grades for the new streets.

There has been a large demand for sewer pipe, according to Mr. McDonald, of the P. Bannon Pipe Company, Louisville, not only from the municipalities, but from the owners of farm land, who are making use of it in their tiling operations. Mr. McDonald is making good use of a booklet in which the system of using vitrified tile to

New Multiple Brick Cutter



THE new Number 10 is a frictional driven automatic cutter for side-cut brick or block. It operates without shock or jar, cuts accurately and does not swell the clay bar. The cutting reel is mounted upon a heavy steel bar above the platen and has its lateral motion upon roller bearings upon this shaft. There is no table to be supported by tracks and wheels and absolutely no running machinery beneath the platen. Every gear is enclosed, thus protecting against wear and safeguarding against accidents. A thoroughly first class machine—producing first class product.

Chambers Bros. Co.,
Philadelphia, Pa.

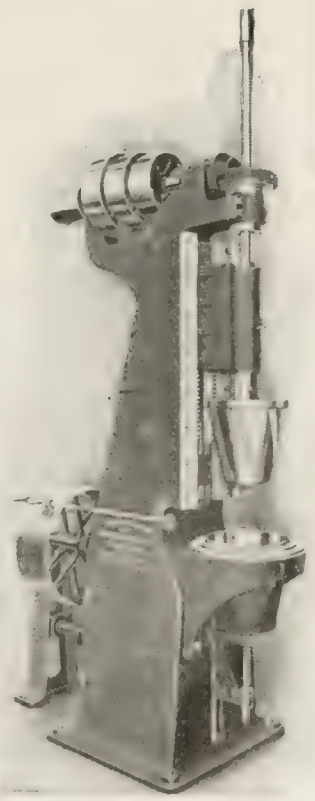
Baird

Pot Molding Machinery

We specialize in
Machines
for the Manufacture
of Pottery

and Guarantee
Every One We Sell.

Write us for information.



Baird
Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

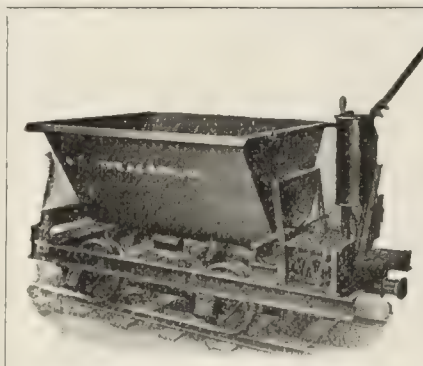
It burns just 75 per cent of the fuel that you are using now, to accomplish the same results.

It burns a low grade coal. There is no waste in the **ash.** Can be cleaned without chilling the kiln.

It permits of absolute control of heat, oxidation and reduction.

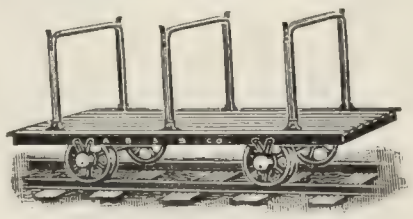
Bulletin B contains complete information on use of grate in kilns.

The Canton Grate Co.
Canton, Ohio



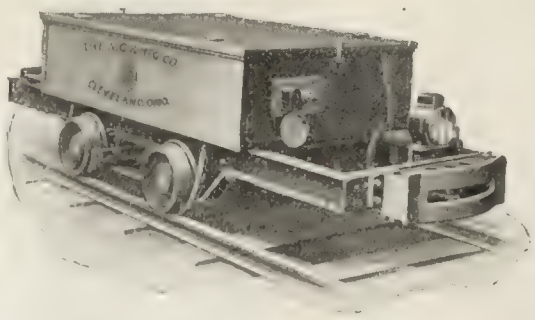
No. 217-E. Side Dump Car Equipped with Motor

REDUCE YOUR HANDLING COSTS
By the Purchase of Efficient Equipment



No. 126 Double Deck Dryer Car

ATLAS
High Efficiency
Cars and
Electric Locomotives



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.
Dept. I
1287 Marquette Road, Cleveland, Ohio

stop washing of land is described, and sales of tile are resulting from it. The company is delivering sewer pipe to a number of small jobs in the city and has orders for a number of the larger jobs.

P. M. Crane, of the East End Brick Company, Louisville, has reported that orders ahead would keep the company's plant in operation to full capacity until August. Although a great deal is not expected in the way of large orders in the near future, the company looks for a number of small jobs, which are always in evidence. Mr. Crane has reaffirmed the intention of the company to build at its newly acquired site, and said that he expected the company would locate its plant there some time during the year.

An interesting phase of the present business situation in Louisville is the fact that the manufacturers and dealers are shipping ware in large quantities to the outlying sections of the state. Sewer pipe and drain tile manufacturers are sending out large shipments daily. With the wave of silo building that is going on over the state, the hollow tile silo is by no means being neglected, and reports from one of the up-state towns is to the effect that one man was building his silo of common brick. The small towns throughout the state which have voted to construct sewer systems this year, are buying much of their sewer pipe in Louisville.

Considerable interest is being manifested in the new Broadway Theater, Louisville, which has just been completed. This building is faced with the new Equitable brick—the one that was specially made by the Hydraulic-Press Brick Company, for use in the new Equitable building in New York—and the ornamentation is in terra cotta. Another feature of interest in this building is the Rookwood tile finished lobby. This is the first time in the city that Rookwood tile has been so used, though there are rathskellers and other similar places in which this tile has been used. The effectiveness of this art finish is attracting much favorable comment.

Isaac Tyler, of the Tyler Building Supply Company, Louisville, has just purchased an automobile for the use of the company and himself. This added equipment is already proving to be a big advantage, as it enables the members of the company to get around the town. The company has secured the contract for supplying the terra cotta on the new Bernheim building, on Fourth street, in Louisville, and also one for similar material for the convent of the Immaculate Conception in Southern Indiana, just across from Louisville. Mr. Tyler, and Leo M. Parsons, who recently acquired a large interest in the company, are doing considerable planning in connection with the installation of a brick display which shall provide for all of the lines carried by the company.

Tile work is now much in vogue in Louisville, where it is found to endure coal smoke and soot better than any other material. The new Thompson restaurant, on Fourth street in Louisville, is a conspicuous example of a fine terra cotta job, having been walled and ceiled in a smooth white tile, while the floor is in terazza tile, the whole making the interior of the restaurant an exceedingly light, clean and attractive place. Most of the other new business houses which are being erected in the city are making use of tile floors to a considerable extent. An object lesson of the wearing qualities of that type flooring may be had from the building at Fourth and Market streets, which has been used as the downtown offices of the Illinois Central Railroad for more than twenty years. Hexagonal white tile were laid in the floor of this building,

and after a score of years of the hardest possible wear, are almost in as good condition as when laid.

LOUISIANA

The New Orleans (La.) Department of Public Works Commissioner, E. E. Lafaye, has begun the publication of petitions for the paving of thirteen streets, the length of the several projects totaling over six miles. Ordinances authorizing the work will be passed shortly, after which the city engineer's department will call for bids. That brick will be used for some of this work is considered certain, and this is important because New Orleans has practically no brick pavements now.

The Colonial Sugar Company of New York, which has many plantations in Cuba, will erect a 60,000 barrel capacity warehouse at its Gramercy, La., refinery, according to a statement from its New Orleans office. The building will be four hundred feet long and one hundred and twelve feet wide, the cost being $50,000. Brick will be the material used, according to the New Orleans office, although other materials, chiefly corrugated iron, have been urged for its construction.

That this warehouse should be of brick construction is considered of the greatest importance to clay workers, for the final decision by the Colonial Company in this matter will serve to guide practically all the sugar industry of Louisiana in the matter of warehouse construction and will have a great effect on the builders of sugar warehouses the world over. This is so because of the recent investigations into the causes for deterioration of sugars in warehouses, one of the foremost reasons of which was said to be dampness. It is claimed that brick will give a warehouse that is perfectly dry.

The decision on the material for the Gramercy warehouse is of further importance as regards Louisiana at this time, because of the announced intention of most of the planters to build warehouses. They will then sell their sugar more slowly than previously, the former practice being to sell the sugar so rapidly as to need little storage room. Conditions during the season just closed forced the planters to hold their sugar. They found this so much more profitable than the old method of quick sales that they will nearly all add some storage room to their plants.

MANITOBA

The Western Brick Company, Ltd., Winnipeg, Manitoba, has been incorporated with a capital stock of $50,000. The incorporators are Napoleon Francois Xavier Beauregard, Thomas Cuthbert Anderson, Herbert MacDougal, Thomas F. Thompson and D. Hackney, all of Winnipeg.

MICHIGAN

The Michigan Face Brick Company, of Grand Rapids, Mich., has moved its offices and exhibition rooms from the Association of Commerce building, in Detroit, to the ninth floor of the Michigan Trust building, in that city.

Charles H. Bryan, of Mercier, Bryan and Larkins, brickmakers of Detroit, says that the company's new brick plant will be producing brick at the rate of 100,000 per day by May 1. It is said that this is one of the most modern soft mud plants in the United States.

Fire on March 15 wrought damage to the extent of a thousand dollars at the Jackson (Mich.) prison brick plant. The plant is a two-story building. About ten carloads of tile on the second floor were a total loss, but no damage was done to the machinery.

P. J. Tucker, of the United Fuel and Supply Company, Detroit, handling a complete line of building supplies and

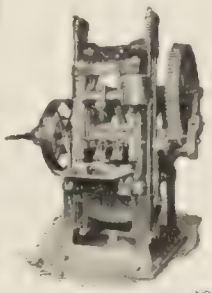
Cutting Down Your Time Element

All waste is not in the kiln or dryer or machine room. While figuring how to eliminate the cost at these points do not overlook the slow, antiquated methods employed in handling raw material and finished product.

"The Lakewood" Equipment Speeds Up Your Work

Every device or machine in the "Lakewood" line is designed to cut down time in handling your material—from the Lakewood Clay Cars and Buckets, Portable Tracks, Turntables and Switches, to the "Lakewood" Pressed Steel Brick Pallets, Richardson Double Die Steam Represses and Dryer Cars.





Send for "The Lakewood" Book

We have a catalogue that does more than list our products, for it contains real information about the economical handling of your materials. A copy is yours for the asking.

THE LAKEWOOD ENGINEERING CO.
(Formerly the Ohio Ceramic Engineering Co.)
CLEVELAND, OHIO

30

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

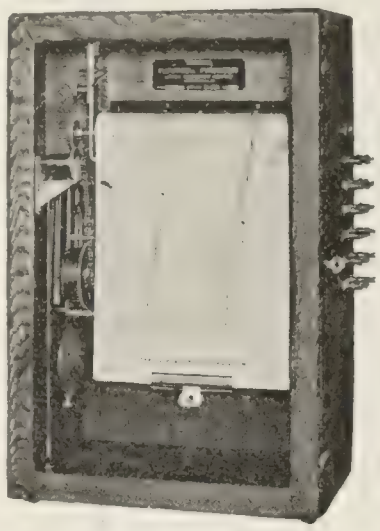
100 William Street, New York

It Makes No Difference

Whether

You Have Three Kilns or Twenty

There is a



TWINKO

THWING INSTRUMENT COMPANY

Multiple-Record PYROMETER

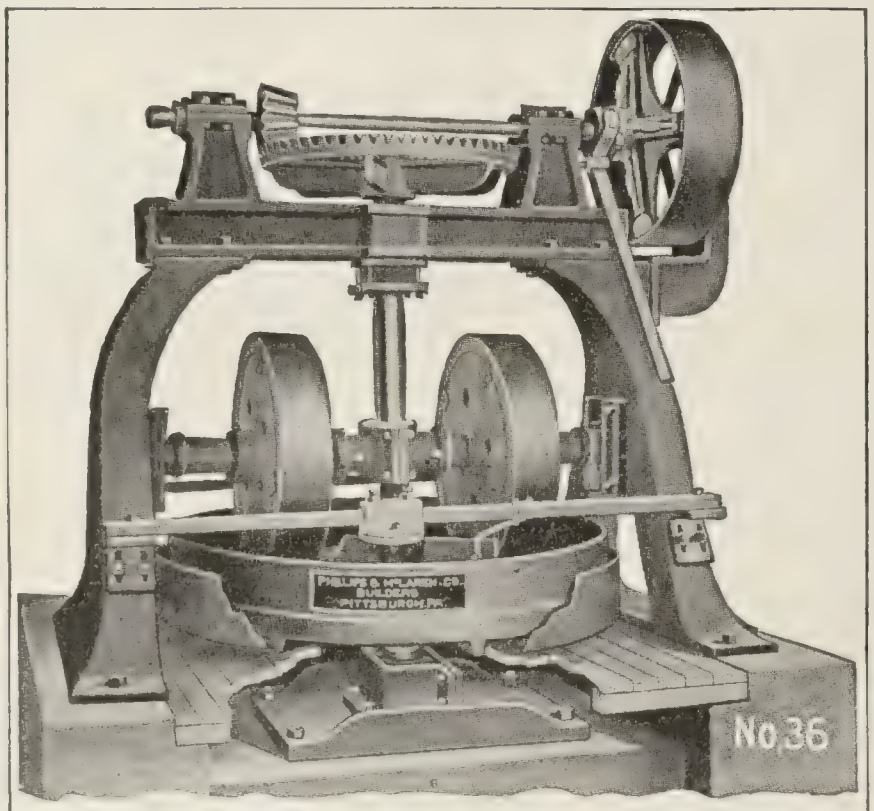
equipment which will care for your needs at the minimum of expense and the maximum of results.

Assume, for illustration, that you have twenty kilns, but only six are at critical stages of firing at one time. You can secure automatic, continuous records of those six, on a recorder as shown in cut, and by using a polarity switchboard, be in a position to connect to any of the twenty kilns that you may select.

Write for Bulletin No. 7

Thwing Instrument Company

437 N. Fifth Street, Philadelphia, Pa.



PHILLIPS & McLAREN CO.

PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.

operating branch offices in all sections of Detroit, says that there is a very brisk demand at present for building brick. He believes that contracts will be let later in the season for larger buildings than most of those now being erected, for which plans are now under way. General conditions are bound to improve, according to Mr. Tucker. Money is easier in Detroit now than it was last fall. This is also going to make a big difference in the amount of building this season.

MINNESOTA

N. P. Ostrum, formerly of Heron Lake, Minn., has opened a plant at Morton, Minn., where he will make brick, hollow block and drain tile. The name of the new concern is the Minnesota Clay Works Company, Inc.

A. C. Ochs Brick and Tile Company, Springfield, Minn., finds it impossible to keep up with its orders. A sufficient number of orders are now on file in the company's offices to keep the plant busy until July. Another plant is now being erected, however, which will increase the company's capacity three-fold. The plant is at present shipping about six carloads of ware per day.

A movement has been started which may result in the establishment of a large brick and tile plant at Ulm, Minn. Local parties have purchased the Wm. P. Schuck farm at that point, which contains large deposits of clay. W. H. Briar, of Mason City, Ia., it is understood, has secured an option on the farm and is preparing to have samples of the clay tested. Should the tests prove favorable, it is probable that a corporation with a capital stock of about $200,000 will be formed for the development of the clay deposits and the manufacture of clay products.

MISSISSIPPI

The Indianola Brick and Tile Company, Indianola, Miss., has secured orders for several million brick recently.

The Eurie Construction Company, Hattiesburg, Miss., has secured the contract for the new brick high school building to be erected at McLaurin, Miss.

MISSOURI

Brick makers of Kansas City announce that the open season is at hand and that building has been resumed in that city on a very large scale. Permits for fifteen new brick buildings were issued during the past two weeks, the total estimated cost being $318,250.

The Western Paving Brick Manufacturers' Association met in Kansas City March 20. H. J. Huiskamp, secretary and general manager of the Buffalo Brick Company of Buffalo, Kan.; W. G. Buckles, treasurer and general manager of the Coffeyville Brick and Tile Company of Coffeyville, Kan.; Charles Francis, president of the Francis-Vitric Brick Company of Muskogee, Okla., and W. L. Barr, general manager of the Moberly Paving Brick Company of Moberly, Mo., were among those who attended.

NEW JERSEY.

The plant of the Atlantic Brick Works, Mays Landing, N. J., which has been closed during the winter months, is about to resume operation. This plant employs about one hundred men.

The Cliffwood Brick Company, Cliffwood, N. J., which recently filed a voluntary petition for a receiver, it is reported, will be reorganized as soon as present financial incumbrances can be disposed of. The difficulties of the company are only temporary and are expected to be readjusted within a short time.

The Hand brick yard, situated on Mountain Avenue, North Plainfield, N. J., near Terrill Road, was recently

brought up for sale in the office of Sheriff Charles Sebring, in Somerville. The sale was held in order to foreclose a mortgage held by Charles Dodd, of Elizabeth. William Garrabrant, of New Providence, was the owner of the brick yard, having purchased the same from Ernest Hand about three years ago. The brickyard property comprises about twenty-five acres of land, well suited for the manufacture of brick. There are several buildings on the property, and a large quantity of brick manufacturing machinery. Although at one time the principal brickmaking establishment in the vicinity, the plant has not been in operation for some time. Beside the Hand plant, Mr. Garrabrant owns and operates a brickyard in New Providence township.

NEW YORK

Signs of activity are beginning to show in the Hudson River district. In Dutchess county, particularly, shipments are being resumed to the New York market. The Hudson River is now clear of all ice and there is nothing to interfere with the towing of barges.

OHIO

The Roseville Paving Brick Company, Lancaster, Ohio, has been incorporated by William S. Bower and others, with a capital stock of $20,000.

The Bessemer Brick Company, of Youngstown, Ohio, has been awarded the contract to supply the city of Kalamazoo, Mich., with its 1915 requirement for brick.

The Manell Block and Tile Company, Cleveland, Ohio, has been incorporated with a capital stock of $5,000, by James A. Farrell, May Otter, A. K. Strong, William J. Coughlin and D. W. Edwards.

Fire has destroyed the Uhrichsville (Ohio) plant of the American Sewer Pipe Company, Akron, Ohio. The loss is estimated at $100,000, which was partially covered by insurance.

During the second week in March, the Puritan Brick Company's plant at Hamden, Ohio, shipped about 3,300,000 paving brick over the Hocking Valley Railroad Company's lines to various points. Forty-nine cars were necessary to take care of the shipments.

At a recent meeting of the stockholders of the Ashtabula Brick Company, Ashtabula, Ohio, it was unanimously voted to issue bonds to the sum of $100,000, for the purpose of enlarging the company's plant. With the present equipment the plant is not now able to take care of its orders, one for a million brick having been refused recently because of insufficient capacity.

Conditions have changed very much for the better during the past month, according to W. W. Coney, of the Moores-Coney Company, Cincinnati. There has been a distinct improvement over conditions existing thirty or sixty days ago. Prospects undoubtedly were dark then, but now they are much better. In another month it is reasonable to believe that building will have resumed its normal volume.

Two jobs recently secured by the Pursell-Grand Company, Cincinnati, one good deal larger than the other, are the handsome apartment house to be constructed in Avondale, Ohio, at a cost of $300,000, in which 250,000 white Kittanning brick will be used, and the Bethel M. E. church at Lockland, Ohio, in which 25,000 Belden shale brick will be used. The Pursell-Grand display room has been completed after some delay by reason of the slow-

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O., in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook.s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

Vigo, Ohio

C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***

The "Martin"
BRICK MACHINERY

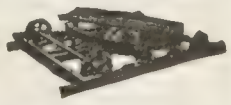


Modern
YARD SUPPLIES





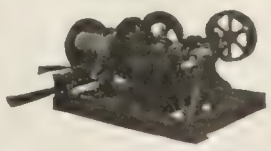




Soft-Mud or Stiff-Mud Processes
Get Our Plans
Dry or Wet Grinding Pans
Barrows and Trucks
Disintegrators
Clay Cars--Dryer Cars
Hoisting Drums

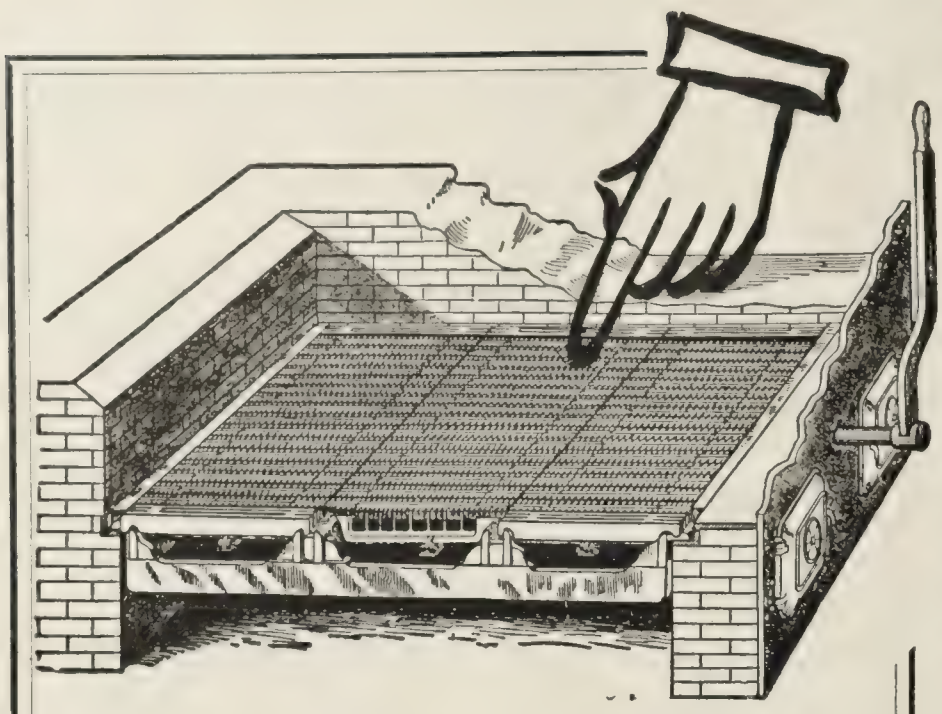
The Henry Martin Brick Machine Mfg. Co.

GET MARTIN PRICE LIST



LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG



More Steam from Your Boilers

Reduced cost of fuel — *burn any coal.*
More dividends for your stockholders.

These advantages are being accomplished by using

Martin Grates

Read the following letter:

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10, 1914.

Martin Grate Co., Chicago, Ill.

Gentlemen:—

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.
(Signed) C. A. Reaver, Secy.

The Martin Grate Co.
347 S. Dearborn St. Chicago, Ill.

ness of materials in arriving. A pergola effect around the top of the panels is very attractive.

The United Brick Company, Conneaut, Ohio, is replacing its old kilns with four new ones, each having a capacity of 50,000 brick. While the old kilns were eight in number, the new kilns will have a larger total capacity than the old equipment. In addition to the eight old kilns, the company now has in operation thirteen kilns, each having the same capacity as the proposed new ones. These kilns are of comparatively recent construction. It is announced that, with the completion of the additional kilns, twenty-five more men will be employed at the plant.

Benjamin Suer and Son, brick manufacturers of Evanston, a suburb of Cincinnati, Ohio, have purchased the brick plant and forty acres of clay which were formerly owned by Mitchell and Beinkamp. The plant and property is located at Lawrenceburg, Ind., and the consideration was $40,000. The new owners will commence at once to rehabilitate the plant so as to be able to begin operations as soon as the weather will permit. The capacity of the plant is 57,000 brick per day and there is a sufficient number of orders on file to keep the new concern busy for the entire season.

While union bricklayers and the contractors, in Youngstown, O., have been unable to reach an agreement of some of the matters in controversy between them, indications are that they will be able to get together and thus avoid a strike. The points in controversy are weekly pay periods and Saturday half-holidays, the first of which is opposed vigorously by the smaller contractors, who declare that this would work a hardship on them. The opinion is that the matter will be compromised by passing over the question of weekly payments, and by granting the desired Saturday half-holiday.

The Youngstown (Ohio) Clay Products Company, which was recently incorporated by J. B. Malloy and others, will take over the property of the Neshannock Brick Company, which is located at Volant, Pa., not far from the Ohio state line. The Neshannock company was organized about two years ago, but because of financial difficulties, has done little business during the past year. Mr. Malloy will maintain his office in Youngstown, with J. B. Thompson as superintendent at the plant. It is expected that the plant will be placed on a paying basis without much difficulty, especially in view of improved business conditions.

The Mission church, in Hyde Park, a Cincinnati suburb, a contract which was recently handled by the Kirchner Brick Company, was something out of the ordinary in that the company furnished brick for the interior as well as exterior. The entire cost of the brick was $1,500, or ten per cent of the total cost of the structure. Paving brick were used for the foundation, the company's "Kingo" face-brick for the exterior, hollow brick in the walls, gray pressed brick on the first floor of the interior, and "Pennsylvania red" for the second floor of the interior. In fact, the building is about as nearly an all-brick structure as could well be found anywhere.

Business of the Hocking Valley Products Company, Columbus, O., has not appreciably decreased by reason of the war and other conditions, according to C. C. Walters, sales manager of the company. The plant at Greendale, Ohio, has been operating to a capacity of 125,000 brick per day, and since the first of the year, the company has made a daily record of shipping ten carloads, a total number of 1,000,000 brick, to New York City for construction work there. One contract calls for 400,000 brick, to be

used in the construction of a new Broadway office building. The company also has on its books a large local contract calling for the same number of brick as the Broadway job.

Since the contract for the construction of the new court house in Cincinnati was awarded, some days ago, to the Charles McCaul Company, of Philadelphia, on a bid which will amount to about $1,400,000, local brick and other material men have been awaiting the distribution of the sub-contracts by the successful bidder. The efforts which were made by a number of Cincinnati contracting concerns to secure the whole contract, by combining the lowest bids made by them in opposition to those of the McCaul Company, were unsuccessful. The contract has not as yet been formally signed, and the matter of awarding sub-contracts will doubtless be withheld until this is done. It is virtually certain that the large amount of common and hollow brick, approximating eight million, which will be used in the building, will be made and furnished by Cincinnati brickmakers.

While the carpenters' strike of last year resulted, in some instances, in the construction of buildings with brick instead of wood or cement, there is no doubt but that the general discouragement of building has been a depressing factor. For this reason, brickmakers, as well as others directly and indirectly interested in building in Cincinnati, were greatly relieved when the incipient painters' strike was recently "nipped in the bud." More than twelve hundred painters in the city were actually out for two days, while their representatives were discussing with the master painters the terms of an agreement as to wages and other matters; and when the outcome was announced as a contract covering the next two years, and the strike ended, there was general satisfaction. It was felt that the city as a whole would have suffered considerably by interrupted building for the second year. As it is, there seems to be little doubt but what the season will be a very active one.

The Kirchner Brick Company, which for some time has had offices in the Mercantile Library Building, Cincinnati, has closed its local office, deciding to concentrate all of its offices at East Fultonham, Ohio, where its plant is located. A. E. DeArmond, who is president and general manager of the company, and E. R. Garlick, sales manager, will make their headquarters at the plant, and will work energetically to increase the company's business. It is expected that within a year the capacity of the plant will be doubled. One of the principal Kirchner products, which has formerly been known as the "Twentieth Century Paver," has been renamed the "Axline Paver," and is meeting with much success under the new name, several good contracts having been landed recently. The face-brick made by the company will be handled in Cincinnati by the Pursell-Grand Company.

OREGON

The Fairmount Brick and Tile Company, of Monroe, Ore., is increasing the capacity of its kilns, the contract for the work having been let.

The Columbia Brick Company, of Portland, Ore., has shipped eight thousand hollow clay tile to Seaside, Ore., for use in the H. O. Hickox apartments and four thousand hollow tile to Milwaukee, Ore., for a high-class residence.

J. H. Duke is preparing to erect at Banks, Ore., a plant for the manufacture of brick and drain tile. An order for the necessary machinery has been placed. The erection of

Stop Wasting Fuel!

You can if you will install the

Hook System of Burning Clay Products

This is not an experiment but it has proven its worth in scores of kilns. One company burned a 22-foot kiln of drain tile in 26 hours, including time for water smoking and high fire. Another company burns drain tile in less than 30 hours, using only 6 tons of coal, and including watersmoking period. Still another reduced its burning time on a full kiln of brick from 168 hours to 77 hours.

We can give you countless references—but better still we guarantee satisfaction. All we ask is that you investigate our system—there will be no obligation on your part.

We will reduce your cost of burning—will greatly increase the capacity of your present kilns due to turning them oftener—will improve the quality of your ware.

The Hook System

Can be installed in your present kiln—round or rectangular, old or new.

Ask us more about it.

Hook Patent Kiln Co.

Main Office: Vigo, Ohio

Canadian Office:
250 Dufferin Street Toronto, Ont.

Watch This Space

For interesting data relative to the

Underwood Producer Gas Burning System

Patented

The Manufacturers Equipment Co.

Dayton, Ohio U. S. A.

the plant is in charge of the Geijsbeek Engineering Company, of Portland, Ore.

PENNSYLVANIA

The New Cumberland Brick Company's plant, New Cumberland, Pa., which has not been active for the past six weeks, has resumed operations.

The Bethlehem Steel Company, Allentown, Pa., has purchased 215 acres of land containing large clay deposits at Quackertown, Pa., and it is rumored that a brick plant will be erected by the steel company.

The Martin Brick Company, of Pittsburgh, Pa., has been awarded the contract to furnish the face-brick for the new school building to be erected at Warren, Ohio. The contract calls for 450,000 brick, of which 200,000 will be of a red, rough-texture, and 200,000 of a light buff color.

The Wilkes-Barre and Hazelton Brick Company, Wilkes-Barre, Pa., has been organized with a capital stock of $150,000. The new concern is to have a plant located about a mile and a half outside of Hazleton, Pa. Joseph G. Schuler has been named as president; N. M. Schmitt, secretary, and P. H. Kehoe, treasurer.

The bricklayers of Pottsville, Pa., recently determined to ask the master builders of that place for sixty cents an hour and seventy cents an hour for bosses or foremen. The carpenters have already asked for forty cents an hour and bosses fifty cents an hour. It is not known, as yet, whether the Master Builders will accede to the demands of these mechanics, or if they will hold out against the increases demanded.

The Savage Brick Company, Meyersdale, Pa., has been merged with the Freeman Fire Brick Company, New Cumberland, W. Va., into a million dollar corporation, which will be known as the Savage Clay Products Company. The deal was closed by Alfred S. Freeman, of Steubenville, Ohio, and Arthur Schiller, of Pittsburgh, Pa., representing a syndicate of Pennsylvania, Ohio and West Virginia capitalists. The new company expects to rebuild the Savage Fire Brick Company's plant at Keystone, Jct., in Maryland, which was destroyed by fire about a year ago.

The Keystone Clay Company, Wilkesbarre, Pa., which was recently organized, has completed the construction of its plant at Wyoming, Pa., and is now engaged in the manufacture of paving brick. While the capacity of the machinery in the new plant is about 65,000 brick per day, the kilns can only accommodate about one-fourth of that amount. It is the intention of the company, however, to add additional kilns immediately which will increase the daily output to 30,000. The local demand for pavers, it is expected, will be very good during the coming summer. In addition to this it is more than probable that the surrounding towns of Edwardsville, Nanticoke, Parsons and Plymouth will place orders for more than ten million brick before fall.

QUEBEC

The National Brick Company, of La Prairie, Que., has secured a contract for 5,000,000 brick to be used in the construction of sewers in the city of Montreal.

TENNESSEE

Union City, Tenn., is to have a new city hall building, which will be built of brick. The building committee consists of Dr. W. M. Turner, J. A. Wheeler and John Adams.

Several hundred men are to be given employment at the plant of the Holston Tile Company, McCloud, Tenn.,

where the first section of the large plant has just been completed. In addition to tile, the company will manufacture brick. A settlement is being constructed with homes for the men who will work in the plant, on which, it is reported $50,000 will be expended.

TEXAS

The city Commissioners of Houston, Texas, will receive sealed proposals for 70,000 square yards of brick block paving on South Main Street Boulevard until April 12.

WASHINGTON

H. M. Read, general manager of the Crane Tile Products Company, of Tacoma, has returned to that city from a trip to Seattle.

V. E. Piollet, sales manager of the Washington Brick, Lime and Sewer Pipe Company, of Spokane, Wash., has returned from a trip to Portland, Ore.

T. C. Thomas, of Seattle, representing the Northwest Tile Dealers' Association, has returned from his trip to Baltimore, Md., where he attended the annual convention of the Interstate Mantle and Tile Dealers' Association. While absent, Mr. Thomas visited Washington, Chicago, Denver, New Orleans and New York. Mr. Thomas has secured the contract for the tiling for the floors and walls of a new hotel to be erected in Seattle.

In the Northwest there are indications of increasing activity among the clayworking plants. Five plants near Spokane, Wash., are now in operation, employing more than four hundred men, an increase of about one hundred men over the beginning of February. Those plants now in operation are the Mica plant of the American Fire Brick Company, the Clayton, Spear and Bay View plants of the Washington Brick, Lime and Sewer Pipe Company and the plant of the Idaho Lime Company.

WEST VIRGINIA

A. H. McConky has been awarded the contract for building a kiln and brick stack at the Aetna plant of the Mack Manufacturing Company, New Cumberland, W. Va.

Captain John Porter, of Kenilworth, W. Va., a paving brick salesman, has left for St. Petersburg, Fla., where he will spend the next few months.

A decided improvement in the fire brick industry in the vicinity of New Cumberland, W. Va., has been noted of late, and a number of the plants which have been on the inactive list are now working almost to capacity. The Claymont Paving Brick Company's plant, which has been idle for about three months, has resumed operations, while the Etna and the Union brick plants have also started work. Each of these plants are in the well-known Hancock county district, and are among the largest in that part of the state.

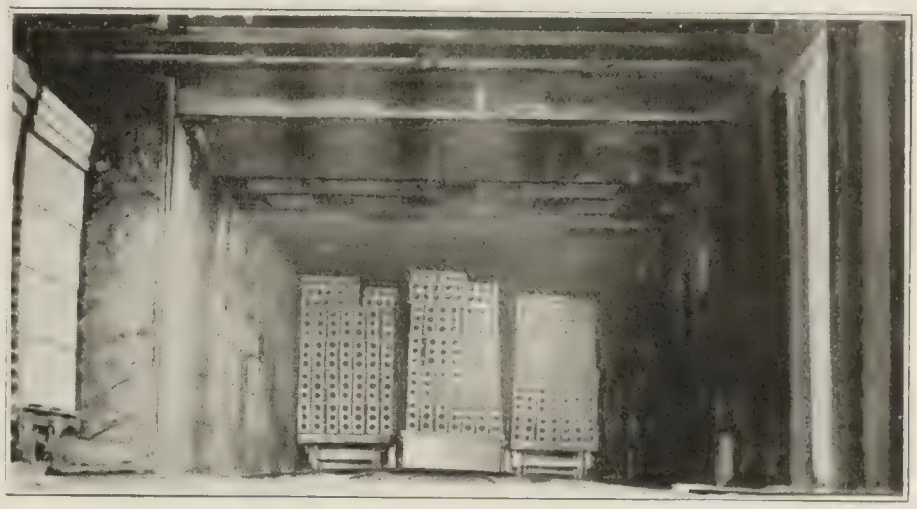
WISCONSIN

Beginning Monday March 29 and continuing throughout that week, Branch No. 8 of the Bricklayers and Masons' Union, Milwaukee, Wis., staged a motion picture show at a local theatre, setting forth the sanitary and fireproof qualities of brick in building construction.

The Hilker Brothers Brick Company, Racine, Wis., is preparing to occupy the land recently purchased by it and has already asked the city council of Racine for a permit to erect an oil tank on the property. The company will also build a warehouse on this land, in which its products will be stored and distributed to local and out-of-town trade.

A Sturtevant (REG. U. S. PAT. OFF.) Dryer That Runs 24 Hours a Day

This installation is in the plant of a Fire Proofing Block Company in the state of New York. It runs twenty-four hours a day, utilizing both waste and live steam.



The Sturtevant Dryer Has Reduced the Cost and Improved the Product at This Plant

Its daily record is a practical demonstration of the scientific soundness of the System.

It gives speed without danger, a minimum of waste, an absence of poor drying.

Let Us Show What The Sturtevant Can Do for You

Make us prove our statement that the "Sturtevant Drying System" is the Safe, Sure, Efficient and Economical way for you to dry your products regardless of your output.

Send for our Data Sheet. Answer the questions asked and our Engineering staff will submit a preliminary estimate without placing you under any obligation.

B. F. STURTEVANT CO.

HYDE PARK, BOSTON, MASS.

And All Principal Cities of the World

SAFE DRYING

means circulation
and absolute control of heat.

The NATIONAL Exhaust Steam DRIER

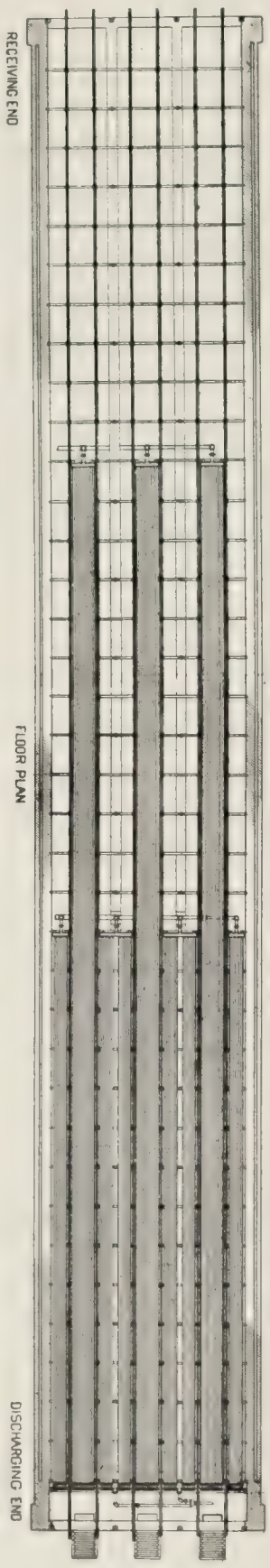
will accomplish the desired results, quickly and cheaply. It does not use shafting, pulleys, belts, fans or conveyors; and it costs absolutely nothing to operate in the daytime for

It Uses

Exhaust Steam

during operating hours, and only a few pounds of live steam at night.

Note on the sketch the way in which heat is automatically controlled. A postal to us will start you on SAFE DRYING.



The National Dry Kiln Co.

1118 E. Maryland Street
Indianapolis, Ind.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

March 25 has been set as the date for the last of the ballots of the referendum vote in the National Brotherhood of Operative Potters to be in the hands of the national officers. This particular vote is similar to a primary election, and is for the purpose of nominating officers for the coming annual election, which is scheduled for May It is hinted that the vote will show that those holding the offices of president, first vice-president and secretary-treasurer will be re-nominated. The annual convention of the Brotherhood will be held in Atlantic City in July, as has been the custom for the past few years. Formerly these conventions were held in the different towns where local unions were located.

The new plant of the Albright China Company, at Carrollton, Ohio, will not be ready for operation before June, according to present reports. This plant will have a capacity of five kilns, and will make a general line of dinner ware and specialties. F. M. Albright, formerly of East Liverpool, and Sebring, Ohio, is at the head of this new company.

The report is current that an East Palestine (Ohio) pottery manufacturer contemplates the erection of a new pottery plant in West Virginia, and that several sites in the vicinity of Huntington have been inspected with this purpose in view. It is also reported that the construction of this plant may be started this year, although no definite information concerning these plans is now obtainable.

It is reported that improvements involving the expenditure of more than $25,000 will be made to the Summit China Company's plant at Akron, Ohio, in order to increase capacity and extend the line of its products. This information will come as good news to the patrons of the company named, as the present output is too limited to take care of the demand.

Stoneware pottery manufacturers in the Zanesville (Ohio) district recently held a meeting for the purpose of arriving at some sort of classification for the various sizes of ware produced in that district. It has been pointed out that the sizes at some plants are different from those made in another, hence it has been rather a hard matter to determine a basic selling list because of this condition.

L. T. Meyers, representing a clay manufacturing company, together with other interested parties, visited the clay deposits located on the Peter Marks Ranch a few miles north of Oroville, Cal., recently with a view of taking steps to open up the deposit. Samples of the clay have been sent to the Niles, Cal., pottery company for test.

The Fulper Pottery Company, of Flemington, N. J., has placed an attractive exhibit in the Varied Industries Building at the Panama-Pacific Exposition, San Francisco. In the same building is the exhibit of the National Terra Cotta Society.

The Pacific Sanitary Ware plant and the Western States Pottery Company's plant, Richmond, Cal., which temporarily ceased operations, have started up again.

Freight Tariffs and Troubles

(*Continued from page* 680.)

peka & Santa Fe Railway Company. A refund of $13.00 was allowed on account of an unreasonable rate applied on one carload of common building brick forwarded from Fredonia, Kan., to Bucklin, Mo., on March 25, 1914.

National Fire Proofing Company vs. the Raritan River Railroad Company et al. A refund of $11.77 was allowed because of the rate applied on a carload of hollow building tile, forwarded from Amclay, N. J., to Messena Springs, N. Y., on March 16, 1914.

Woodland Clay Company vs. the Chicago & Eastern Illinois Railroad Company, et al. A refund of $30.50 was allowed on account of an unreasonable rate charged on a car shipped from Woodland, Ill., to Tower Grove Station, St. Louis, Mo., on September 3, 1913.

E. M. Sergeant Company vs. the Southern Railway Company, et al. A refund of $217.58 has been allowed on account of an unreasonable rate applied on two carloads of clay shipped from Langley, S. C., to North-East, Md., on August 11, 1913.

Perkins-Goodwin Company vs. the Central of Georgia Railway Company, et al. A refund of $24.15 was allowed on account of the rate applied on one carload of clay shipped from Claymont, Ga., to Wanaque, N. J., on February 18, 1914.

The Denver Pressed Brick Company vs. the Colorado & Southern Railway Company, et al. A refund of $24.78 was allowed because of the unreasonableness of the rate applied on two carloads of pressed brick forwarded on June 24 and July 1, 1914, from Denver, Colo., to Casper, Wyo.

Atlanta Terra Cotta Company vs. the Atlanta & West Point Railroad Company, et al. A refund of $44.40 was allowed on one carload of terra cotta shipped from East Point, Ga., to Panama City, Fla., on May 9, 1914.

National Fire Proofing Company vs. the Hocking Valley Railroad Company. A refund of $8.75 was allowed on account of the unreasonable charges collected on one carload of building tile shipped from Haydenville, Ohio, to Readstown, Wis., on August 20, 1913.

National Fire Proofing Company vs. the Raritan River Railroad Company. A refund of $4.74 was allowed because of the rate charged on a carload of hollow building tile, forwarded from Amclay, N. J., to Evans, N. Y., on May 20, 1914, and a refund of $6.01 was allowed because of the unreasonable charges collected on one carload of hollow building tile shipped from Amclay, N. J., to Clayton, N. Y., on May 9, 1914; also a refund of $19.64 was allowed on account of the unreasonable rate charged on one carload of hollow building tile, forwarded from Amclay, N. J., to Pulaski, N. Y.

National Fire Proofing Company vs. the Pennsylvania Railroad Company, et al. A refund of $7.47 was allowed on account of the rate applied on one carload of drain tile forwarded from East Palestine, Ohio, to Norton, Va., on May 16, 1913.

REHEARINGS DENIED

A rehearing in the following cases has just been denied by the Commission: Case No. 4782, of the Standard Vitrified Brick Company, et al., vs. the Chicago, Burlington &



Lower Prices on Gandy Belt

THE present low price of cotton enables us to buy our raw material for less money.

We are therefore able to reduce the price of The Gandy Stitched Cotton Duck Belting, at the same time maintaining strictly the high quality of our product.

The Gandy is the Pioneer Stitched Cotton Duck Belt. It has been before the public for thirty-six years, and it is giving splendid service wherever employed.

It pays to buy the best—the Gandy Belt is the best by test.

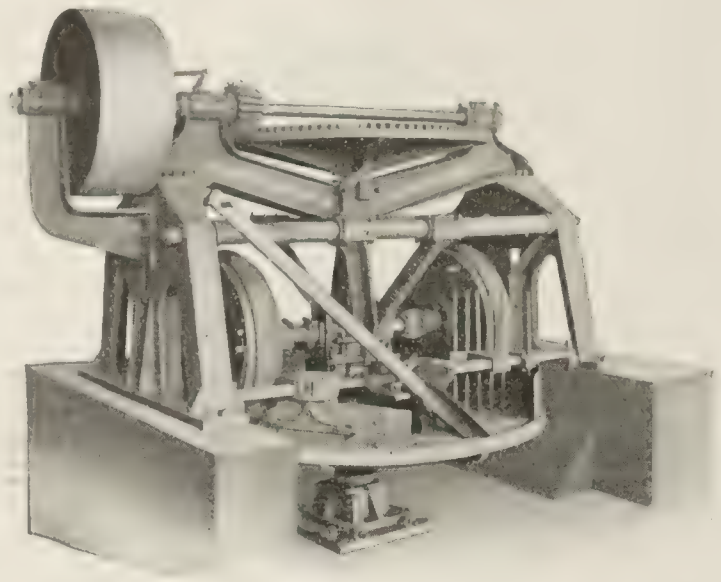
The Gandy Belt gives longer service than the other Stitched Cotton Duck Belts, because it is better made.

Samples and full information will be gladly supplied.

The Gandy Belting Company

732 West Pratt Street, Baltimore, Md.

New York Office: 36 Warren Street



Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

Quincy Railroad Company; No. 5597 of the C. W. Hull Company vs. the Chicago, Burlington & Quincy Railroad Company and Investigation and Suspension Docket No. 227, concerning Kansas-Iowa brick rates.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points

From Brownstone, Pa., common brick, to Mt. Gretna, Pa., $1.00 per net ton.

From Essex, Vt., brick, to Atwater, Hochelaga, Mile End, Montreal and Westmount, Que., 5.8c per cwt.

From Gettysburg, Pa., brick, to Culpepper, Va., $2.56 per net ton.

From Gettysburg, Pa., brick, to Fordham, Mount Vernon and Poughkeepsie, N. Y., $2.84 per net ton.

From Newport, Vt., brick, to Atwater, Hochelaga, Mile End, Montreal and Westmount, Que., 8.4c per cwt.

From Philadelphia, Pa., common brick, to Woodstown, N. J., $1.05 per net ton.

From Pottstown, Pa., brick, to Royersford, Pa., 45c per net ton.

From Middle West Points

From Alton, Dow and Grafton, Ill., brick blocks, clay and shale products, to St. Louis, Mo., 53c per net ton.

From Peoria, Ill., brick blocks, clay and shale products, to St. Louis, Mo., $1.16 per net ton.

From Springfield, Ill., brick blocks, clay and shale products, to St. Louis, Mo., 89c per net ton.

From Western Points

From Buffalo, Ia., brick, hollow building tile, fire brick and fire clay, to Cudahy, Wis., 5.3c per cwt.

From Buffalo, Kansas, paving brick, to York, Nebr., 12c per cwt.

From Caney, Carlyle, Chanute, Cherryvale, Elk City, Coffeyville, Fredonia, Girard, Humboldt, Independence, Peru, Iola and Pittsburg, Kansas, common building brick, to Ada, Nebr., 15c per cwt.; to Ames and Bay State, Nebr., 12c per cwt.; to Austin, Boelus and Dublin, Nebr., 15½c per cwt.; to Brainard, Nebr., 12½c per cwt.; to Columbus, David City, Duncan, Durant and Foley, Nebr., 13c per cwt. and to Elba, Nebr., 16c per cwt.

From Mason City, Ia., brick, except bath and enameled, and clay products, to Breckenridge, Minn., Wahpeton and Fargo, N. D., and Moorhead, Minn., 12c per cwt.; to Franklin, N. D., 15c per cwt.; to Nortonville, N. D.; 15.5c per cwt.; to Millarton, N. D., 16c per cwt.; to Sydney and Homer, N. D., 16.5c per cwt.; to Jamestown, Clementsville and Wimbledon, N. D., 17c per cwt.

From Mason City, Ia., brick, to Gilbert, Va., and Mountain Iron, Minn., 13.1c per cwt.; to Aurora, Biwabik, McKinley, Pettit, Sparta, Eveleth, Minn., 13c per cwt.; to Chrisholm and Hibbing, Minn., 13.2c per cwt.

British Clayworkers Bidding for World's Trade

While the American papers are urging the domestic potters and glass manufacturers to get busy and corner the world's pottery and glass trade, or at least a larger portion of it than we have formerly had, they must not lead themselves to believe that the trade will come here of itself. Germany has been an important factor in almost every branch of the industry. She is now, temporarily,

at least, out of competition. The English press is urging British manufacturers to make a bid for a larger share of the world's trade than heretofore, and in her the United States will have a formidable competitor.

No mention is made by the English press of the United States as a possible competitor, the articles dwelling principally upon the vast trade built up by Germany and how the British potter can capture markets.

The chief characteristics of German china and earthenware is either their cheapness or their design.

The Germans have, in fact, succeeded in two ways—they are able to produce a cheaper class of ware than we seem able to do in this country, and they are also able to build up a better class trade, in view of the striking designs (both in shape and decoration) of the ware they offer. Taking these two classes separately, we believe that the cheapness of the German ware is due to effecting savings in manufacture, which the British potter has considered, but refused. To take only one instance, that of coal consumption, the British potter continues to use the same type of kiln as did his great-grandfather, and which wastes fuel at an extravagant rate. The German potter, on the contrary, having come much later in the field, and with less tradition to maintain, has willingly adopted more economical kilns, and is able to save very considerably in consequence.

With a series of bodies and glazes which are better in many respects than those used for the cheaper German ware, English potters have failed to compete because of the wastefulness in kilns and other defects of an organizing character. They can make the ware—both cheap and of better quality—but it costs too much. With the right expenditure of more capital, with the assistance of more highly specialized technical and organizing ability, they can unquestionably beat the Germans at their own game.

As regards the better class of ware, in which price is of less importance, our potters must seek to cultivate the trend of taste more vigorously. There is too much tendency at present, to offer new designs of a spasmodic character, without such adequate study of the public taste and the directions in which it is tending, as the Germans have been accustomed to provide. A carefully studied artistic simplicity marks some of the most profitable German ware, and though some of it is admittedly freakish, yet the best markets are captured by ware of good quality, the design of which is calculated to meet the tastes of the public in the localities in which it is sold. How many of our potters know anything of the tastes of the better educated people of South America? Yet without such knowledge it is unreasonable to expect to build up a large trade in face of competition. In short, it is not our technique which is at fault in the better class of ware—on the contrary we can offer much better material than the Germans. Where we have failed to capture the markets for this ware, we have failed because of our ignorance of the aesthetic side of the subject, of what will sell well, and of the best methods of selling it. In view of the foregoing, America will not have the field to herself.—"Pottery & Glass."

Permanency and Beauty in Brick Houses

The permanency and beauty of a house built of brick is no better shown than in the old dwellings, scattered about the eastern states, which have been standing for hundreds of years. They were built long before the colonies declared their independence and are still standing, venerable and

The Ambursen Company as Tramway Engineers

We are often asked why the AMBURSEN COMPANY took up Short-Haul Transportation as a Department. The answer is timely because it strengthens our position as Consulting Engineers for the purchaser.

The AMBURSEN COMPANY is known everywhere as Engineers and Contractors in heavy concrete work in hydraulic construction. During the depression of the past two years we have made a systematic study of all methods leading to reduction of cost per yard. A heavy item is the haul of material, gravel, sand, broken stone, cement, steel, etc., etc., from the railroad point, the quarry or gravel pit to the work. The great sums of money expended by us in this item led to an investigation to discover some feasible means of mechanical transportation. Recognizing that the old forms of tramway had no place in such service we were fortunate in happening upon the Lawson Tramway which at once appealed to us as possessing the exact features required. During this investigation our Mr. Church became the Consulting Engineer of the Consolidated Tramway Company. In the course of time, however, the broadening possibilities became so evident that it carried the future development of the business to a point further than that Company was organized to follow. We therefore made a proposition to take over the entire business, plant and equipment, which proposition was accepted and is now in force.

Having secured control of the business we set about redesigning the entire construction on improved lines for a more extended service than had been contemplated. This redesigning has covered practically every detail of the tramway as well as introducing many new features looking into its broader application.

In presenting the **LAWSON TRAMWAY** therefore we have the great advantage of being thoroughly conversant with the requirements **from the user's standpoint.** To this we add the advantage of a complete engineering and construction organization which permits us to take contracts for tramways delivered and erected,—a point hitherto carefully avoided.

Take note of the fact that we were not **obliged** to go into the tramway business. We were not already in it,—had no investment to protect. We came into it from the outside,—not the inside. Our spirit was critical,—far more critical than that of the non-professional purchaser. We took over the Lawson Tramway therefore because we saw in it the fundamentals of a complete reorganization and expansion of the Short-Haul scheme and foresaw the founding thereon of a great business. We are not disappointed.

Very respectfully,

AMBURSEN COMPANY

Tramway Department

61 Broadway, New York

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press

Auger Brick Machines

Down Delivery Tile Mills

Oil Burning Equipment

Crude Oil Engines

Piano Wire Screens

Dry and Wet Pans

Soft Clay Brick Machines

Pug Mills

Wet and Dry Clay Disintegrators

Smooth and Conical Roll Crushers

Wood Moulds

Trucks and Barrows

Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.

20 W. Jackson Blvd. Chicago, Ill.

laden with the years. Generation after generation of families have come into being within their walls, and the old structures still stand and put to shame many modern cheap buildings, with their staunchness and beauty.

The oldest of a number of these is the Cradock house, a charming old structure located at Medford, Mass. It is the oldest dwelling in the original portion of the United States, having been built in 1632 for Gov. Cradock of the Massachusetts Bay colony. It is well nigh fireproof, having walls eighteen inches in thickness. It served as one of three brick forts. The oval windows were used as portholes during its service as a place of defence. For almost three centuries—283 years to be exact—it has withstood the ravages of time and weather, and stands today, a monument to the durability of brick as a building material.

Another old building, built nearly a century later, and belonging to the Georgian period, is the Stenton house, at Germantown, Pa., designed and built by James Logan, first secretary to William Penn in 1728. During this period brick came into general use and soon proved its worth both in a practical and artistic sense. A close examination of the brickwork, which has the wonderful tone value which nature and time alone can produce, impresses one with the belief that brick is the most permanent, beautiful and economical of building materials. The Stenton house has stood 187 years, and would still be preferred as a home to thousands of more pretentious but less attractive and less comfortable dwellings.

The Woodford house, located at Fairmount Park, Philadelphia, was built in 1734, six years later than the Stenton house, yet is old enough to have seen generations of less staunch buildings fall before the onslaught of years, and the more violent agencies of flood and fire, or the ruthless hand of the wrecker, who tears away to build again more solidly. Nearly 200 years of usefulness has not impaired its value, and the visitor wonders at its age and that deterioration has been so slight.

At Annapolis, Md., the Brice house, built in 1740, is a place of interest. This is a big rambling structure, in its plan presenting the typical southern arrangement, a central pavilion with flanking pavilions. The structure was formerly known as the Jennings house. It is in a neighborhood which has quite a number of substantial old houses, built from the old brick which was brought to Annapolis as ballast in the light-freighted vessels that came for tobacco. The house is in excellent condition and stands solidly, resisting the elements, while age has but enhanced and mellowed its original beauty.

Extreme simplicity marks the architectural design of the old John Derby mansion, built at Salem in 1760, which stands today a typical example of delicacy and grace, combined with perfect harmony in proportions. Little or no repairs have ever been made in the nearly two centuries of its existence, yet the house is in excellent condition, a striking proof of the durability and permanence of brick construction and low cost of maintenance.

"Homewood," a long, low rambling dwelling, is of a later period, having been built in 1803 by Charles Carroll of Carrolton. It is situated in Baltimore, and is one of the best examples of the colonial brick house of the South. The house is marked by its refinement of detail throughout. The exterior is constructed of small red brick laid in Flemish bond. The total length of the building is 140 feet. This dignified and decorative structure is celebrated as one of the most imposing homes in America.

A study of these grand old houses would be of great profit to the home builder. The great strides that have been made

in the improvement of building brick, as to quality as well as the distinctive element of decorative value, make this material doubly attractive for present-day needs—Springfield (Mass.) "Homestead."

Domestic Kaolin Supply Declared Satisfactory

Government experts, after an exhaustive investigation of the kaolin, feldspar and quartz fields of the Southern Appalachian region, are of the opinion that the raw material from this region has no superior for color and that there can be no doubt of the United States being fully able to supply nearly all of the kaolin required for domestic consumption and that in quality the kaolin now available in the Appalachian region is excelled by none. The findings of the experts have been brought out in bulletin form by the Bureau of Mines, the writer of the bulletin, A. S. Watts, presenting the subject in an interesting manner, a section of which we reproduce herewith:

Kaolin or white-burning residual clay varies more or less in its physical and chemical properties depending on the rock of which it was a disintegration product. When freed from the other residual material with which it is almost invariably mixed, its chemical composition approaches very closely that of the mineral kaolinite.

Kaolinite has the formula $Al_2O_3,2SiO_2.2H_2O$, which expressed in percentages, is as follows:

SiO_2	46.3
Al_2O_3	39.8
H_2O	13.9
Specific gravity, 2.6	100.0

An ultimate chemical analysis, by which the percentage of each component of the kaolin is determined, is valuable as indicating the impurities present and the proportions in which the various components are present, but without additional data in regard to the physical properties and the mineral composition of the kaolin one can form little idea from such an analysis of the actual commercial value of the material. The following analyses show how similar may be the chemical composition of a kaolin, a fire clay, and a ball clay.

(*Analyses of kaolin and fire clay by Ries. Analysis of ball clay by Edward Orton.*)

Constituent.	*North Carolina kaolin*	*Fire clay*	*Ball clay*
SiO_2	45.50	45.29	48.94
Al_2O_3	37.34	40.36	36.69
Fe_2O_3	1.92	.51	.35
CaO	.44	.037	.47
MgO	.20	.015	.71
Alkalies	.52	.136	1.28
Water of combination	13.96	13.608	12.14
Total	99.78	99.956	100.58

The physical tests show the following results:

Material	*North Carolina kaolin*	*Fire clay*	*Ball clay*
	Per cent	Per cent	Per cent
Shrinkage—Air	4	6	8
Fire	8.5	3	11
Total	12.5	9	19
Color	White.	Gray.	Cream.

It is generally understood that the content of iron oxide is a gauge of the color of the burned clay, but here is a kaolin with 1.92 per cent oxide burning a pure white, although a fire clay with 0.551 per cent oxide of iron burns

Cut Bevel Gears

TWENTY-FOOT cut bevels is our limit, but we can make bevel gears from this down to the smallest, for Clayworking and Brick Machinery.

LET US SOLVE YOUR

BEVEL GEARING PROBLEMS—

No matter how simple or complicated.

Address Dept. B

Nuttall

Pittsburgh

Made in U. S. A.

Goodrich promised to cut my tonnage costs and made good! That's why Goodrich gets my business and holds it!
Supt. Wise

Every Goodrich Conveyor Belt is flexible, troughs easily and hugs the pulleys. Users are writing us that they can remove edge-wearing guide idlers from their installations — our Belts are so true-running.

Goodrich
LONGLIFE MAXECON
CONVEYOR BELTS

Years of engineering study and rubber experience enable us to give you belts that won't shrink or stretch — eliminate spillage —that have the strength, the rubber cover and the edge construction that mean greatest economy and efficiency for *you* in the conveying department of your business.

We will gladly refer you to customers who are finding our belts best. You owe it to yourself and your cost sheet to get *the facts* on what our belts are doing in great plants all over the earth. Advise us regarding your installations.

Goodrich Products:

Conveyor Belts	Hose—all kinds
Elevator Belts	Packing
Transmission Belts	Valves, etc.

The B. F. Goodrich Company
Factories: Akron, Ohio

"Get in touch with Goodrich"

gray and a ball clay with 0.35 per cent oxide of iron burns cream.

The role of kaolin in all pottery mixtures is that of a plastic band in the forming of waves and its bonding action continues through the drying process. In firing, the kaolin, by its high refractory value and its resistance to the solvent action of the feldspar, enables the mass to retain its form, although the particles of kaolin may be enveloped in fluid feldspar so completely that the mass becomes translucent and appears homogeneous. Hence the testing of kaolins in porcelain mixtures must consist of tensile tests and translucency tests, in addition to the determination of vitrification range, color and shrinkage.

For kaolin tests in pottery mixture, the same proportions of material are used as for feldspar tests in pottery mixtures, that is: Feldspar, 20 parts by weight. Quartz, 30 parts by weight. Kaolin, 50 parts by weight.

The feldspar and quartz are standard materials and the kaolin is the material being tested. The materials are all in the form of impalpable powders and are mixed together with just enough water to produce a plastic mass capable of being formed as desired. The mass must be thoroughly mixed to homogeneity, as otherwise the product is worthless.

For tensile tests the method of testing is the same as outlined for tensile tests of the kaolin alone. The tensile strength of the kaolin investigated is so low that when it is reduced by the addition of nonplastic feldspar and quartz, the briquets are too weak to support the clamps for testing.

Hence, such a test is impossible unless some plastic clay is added to give strength to the mixture, and in that event a test would represent the bonding strength of the added clay, so that for the particular kaolins under investigation no tensile test in pottery mixtures is practical. This statement is not to be considered as applying to kaolins generally, as most kaolins possess measurable tensile strength, and this is an important factor in considering the amount of plastic clay that must be added in order to produce an industrially valuable mixture.

For translucency tests, the process outlined for a similar test of feldspar is recommended. The test mixture described above is molded into wedges which are fired to the maturing temperature of the standard feldspar and tested by determination of the maximum thickness, expressed in centimeters at which can be detected a No. 20 wire on the face of the trial next the lamp with the lamp 3 inches distant from the trial. This test is very important, for American kaolins vary greatly in the property of producing translucent bodies with a given mixture of standard feldspar and quartz, and in the color they impart to such bodies. Some kaolins produce pottery bodies which are white both in reflected and in transmitted light, but most American kaolins produce pottery bodies which are pale cream in reflected light and a decided cream in transmitted light.

The grading of color by the kaolins in standard porcelain mixtures has been accomplished by comparison and the most absolute white, free from tint, that was obtained in this investigation is given a value of 1. The standard trial, which to all intents and purposes is pure white, has been given a value of 5, the other kaolins when used in the porcelain mixtures receiving the value based on the class in which they fall by ordinary optical study.

To determine shrinkage the wedges are measured before and after drying and after firing, or preferably a die of known length is lightly impressed in the face of the newly made briquets or wedges. By measuring these impressions after drying and burning, the shrinkage can be easily and quickly determined.—"Pottery & Glass."

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Deavitt, H. M.

Aerial Tranmways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Link-Belt Co.
Manufacturers Equipment Co.
Marinette Iron Works.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.
Martin Brick Mach. Mfg. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Manufacturers Equip. Co.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Car Movers.
Marion Machine, Fdry. & Sup. Co.
Sackett Screen & Chute Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.

Cement Filler.
Lehigh Portland Cement Co.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.
Stevenson Co.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Link-Belt Co.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Link-Belt Co.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Coloring.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Machine Mfg. Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Specialty Wire Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Draft Gages.
Ceramic Supply & Cons. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Martin Brick M. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Phillips & McLaren.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

THE BUYERS' DIRECTORY—Continued

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Link-Belt Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Price Electric Co.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Mathews Gravity Carrier Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Copping Bros.
Deavitt, H. M.
Freese & Co., E. M.
Frink Pyrometer Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Equip. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Copping Bros.
Freese & Co., E. M.

Explosives.
Du Pont Powder Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Cincinnati Frog & Switch Co.

Fuel Economizers.
Sturtevant Co., B. F.

Furnaces.
Brown Instrument Co.
Stupakoff Laboratories.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Fate, J. D. Co.
Link-Belt Co.
Nuttall Co., R. D.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Insulated Wire.
Goodrich Co., B. F.

Insurance.
Read & Day.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Klose, K. W.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Equip. Co.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Locomotive Cranes.
Link-Belt Co.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Cincinnati Frog & Switch Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.

Powder.
Du Pont Powder Co.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

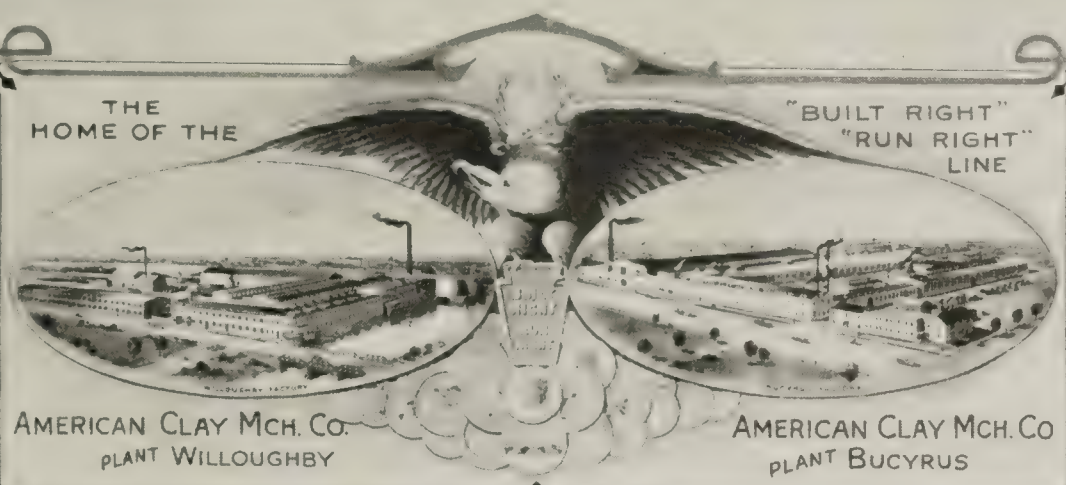
Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons. J. C.
Wallace Mfg. Co.

Pug Mill Repair Parts.
Lehigh Car, Wheel & Axle Wks.

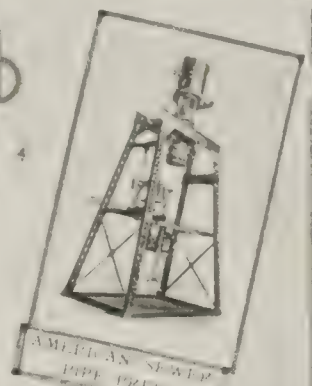
Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Price Electric Co.
Stupakoff Laboratories.
Thwing Instrument Co.

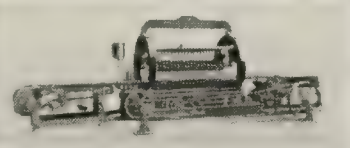


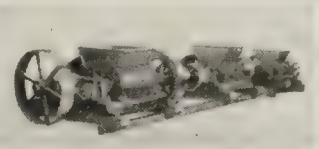

AMERICAN No. 292 REPRESS

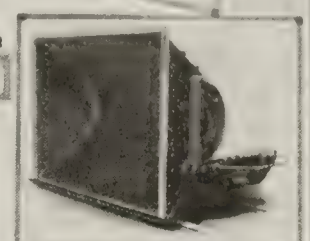

AMERICAN STEAM PIPE PRESS

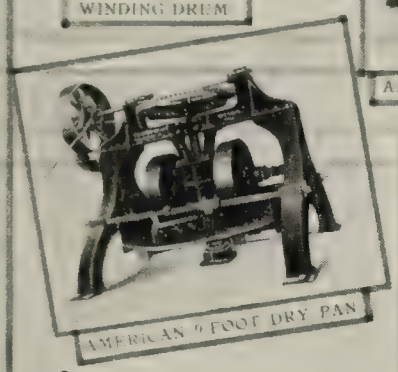

AMERICAN No. 245 WINDING DRUM


AMERICAN No. 291 PUG MILL


AMERICAN No. 20 ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN CLAY CAR


AMERICAN 9 FOOT DRY PAN


HAIGH CONTINUOUS KILN

Spring Openings

It's time to open your clay pit.
It's time also to dig into methods.

A steam shovel will dig for you both in the clay pit and in modernizing your equipment.

A lessening of clay cost means an increase in profits.

Our Steam Shovel is built for clay pit work. It's not for railway construction nor canal building but especially for the clay worker.

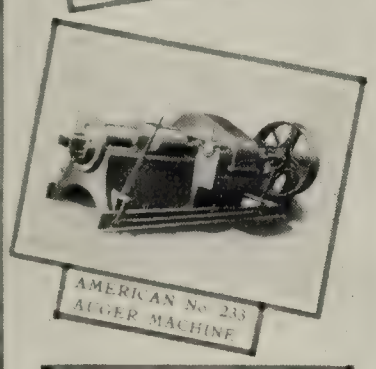
It has many clay plant features which we would like to tell you about. Let us send our catalog. It's full of figures, facts and photos.

It's Haigh Kiln time too. Nothing like the Haigh Continuous Kiln for saving cost. A half the fuel and a half the labor. Better material too. Ask for Catalog.

We make every machine and appliance needed for making clay products by all processes. Let us have a word with you about large or small wants.

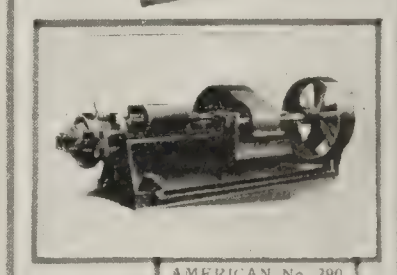
The American Clay Machinery Co.

Bucyrus, Ohio

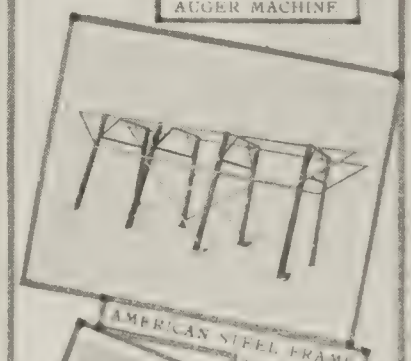

AMERICAN No. 233 AUGER MACHINE

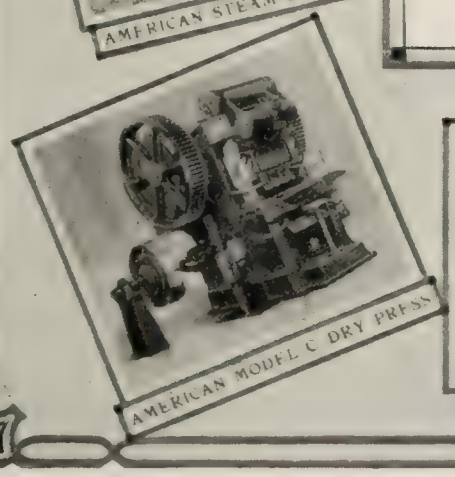

AMERICAN WASTE HEAT DRYER


AMERICAN DRYER CAR

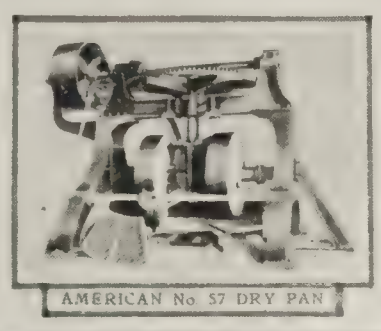

AMERICAN No. 290 AUGER MACHINE

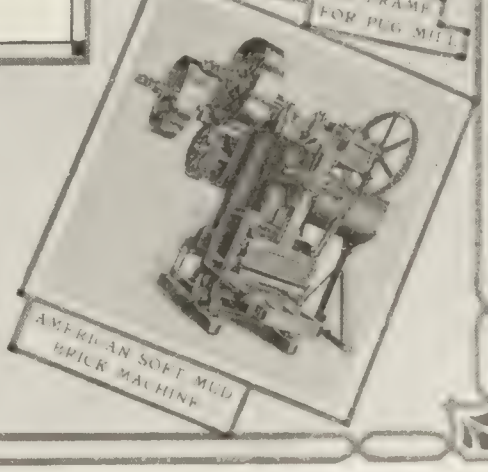

AMERICAN STEAM SHOVEL


AMERICAN STEEL FRAME FOR PUG MILL


AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No. 57 DRY PAN


AMERICAN SOFT MUD BRICK MACHINE

THE BUYERS' DIRECTORY—Continued

Quartz Glass Articles.
Engelhard, Chas.

Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Frank, M. K.
Foster Co., L. B.
Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.

Railway Equipment (Industrial.)
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Rattler.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.

Revolution Indicators.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.
Cling-Surface Co.

Roofing Tile Machinery.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Martin Bk. Mach. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Link-Belt Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Weller Mfg. Co.

Sewer Pipe Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.
Stevenson Co.

Shale Planer.
Arbuckle & Co.

Shovels (Hand).
Sackett Screen & Chute Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Silo Front.
Zook, G. W.

Soft Mud Brick Machines.
American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Wallace Mfg. Co.

Sprocket Wheels.
Link-Belt Co.

Steamers (Clay).
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.
Brown Instrument Co.

Steam Separators.
Canton Grate Co.

Steam Shovels.
American Clay Machy. Co.
Ball Engine Co. (Erie Steam Shovel)
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Wallace Mfg. Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

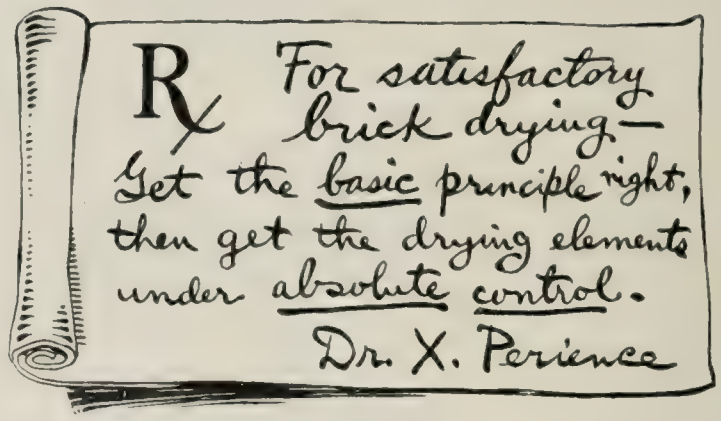
Steel Ties.
Cincinnati Frog & Switch Co.

Steel Towers.
Caldwell Co., W. E.

Supplies.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons, Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.
Weller Mfg. Co.

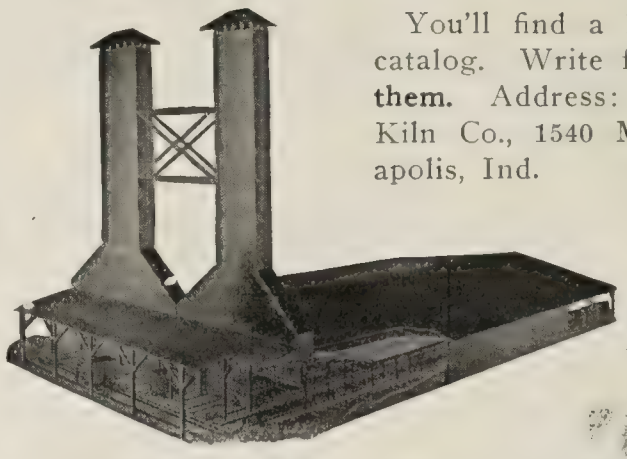
Switches and Frogs.
Cincinnati Frog & Switch Co.

Tanks.
Caldwell Co., W. E.



Over 25 Years of Success

proves that the basic principle of The Standard Natural Draft Steam Drier is correct. As to its perfect adaptability to suit **clays of all natures,** ask any Standard Drier user.



You'll find a list of users in our catalog. Write for it—then write to **them.** Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Wallace Mfg. Co.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Frink Pyrometer Co.
Manufacturers Equipment Co
Standard Dry Kiln Co.

Tramways.
Ambursen Co.

Transfer Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.

Unloading Devices for Pans.
American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.

Water Tanks.
Caldwell Co., W. E.

Wet Pans.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles (Car).
Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.

Winding Drums.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Barrett's PAVING PITCH



Grand Ave., Beloit, Wis. Brick Pavement filled with Barrett's Paving Pitch.

A Filler That Outlasts the Pavement

THE question of the right filler is vital to the life of any pavement.

A filler must be waterproof under all conditions, otherwise frost and rain will get in and ruin the foundation. Paving Pitch is the only filler proved waterproof under all conditions. Asphalt becomes weak in adhesive power in cold weather—the brick shrinks away from it, and water seeps in through the cracks.

Sand of course cannot properly be considered waterproof under any conditions.

Cement is too rigid. It crumbles under vibration, and cracks and "blow-outs" occur in hot weather which later let in the water. With Paving Pitch every joint is an expansion joint, and is waterproof under all conditions. There are Pitch-filled pavements 30 years old and in perfect condition today.

To be sure of a lasting job, specify Barrett's Paving Pitch.

Illustrated booklet free on request.

BARRETT MANUFACTURING COMPANY

NEW YORK CHICAGO PHILADELPHIA BOSTON ST. LOUIS CLEVELAND CINCINNATI
PITTSBURGH DETROIT BIRMINGHAM KANSAS CITY MINNEAPOLIS
SALT LAKE CITY SEATTLE

WEBB WIRE WEARS WELL

WE MANUFACTURE OUR

Red Label Piano Wire

particularly for Brick and Tile Cutting. All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

THE WEBB WIRE WORKS

NEW BRUNSWICK, N. J.

8,000 SOFT MUD BRICK PER HOUR

is the guaranteed capacity of our brick machine with automatic mold dumper combined.

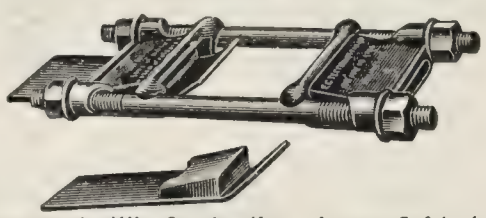
¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

ECTMCo

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction. Insures Safety to Kiln Contents.

WROUGHT IRON BANDS

Wall and Crown Guides
Crown Covers and Ventilators

Write for
Discount and Net Prices

E. C. Tecktonius Mfg. Co.
Racine Junction, Wis., U. S. A.

Up-and-Down Draft
Tecktonius-Vogt
Round Kiln



THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

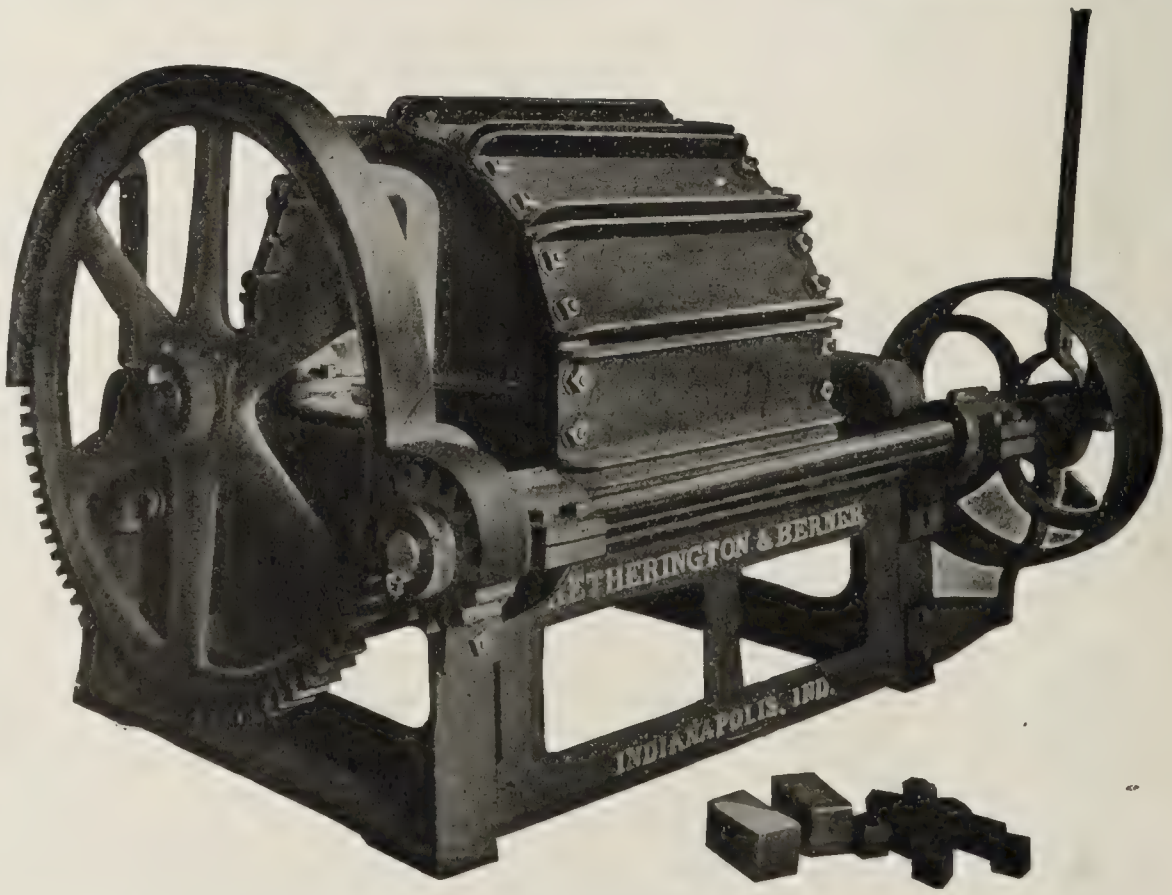
LATEST IMPROVEMENTS

and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the National Paving Brick Manufacturers' Association.

For descriptive circular and prices address

HETHERINGTON & BERNER

INDIANAPOLIS, INDIANA



Portable and Industrial Track

Prompt Shipments

THE CINCINNATI FROG & SWITCH COMPANY
MANUFACTURERS OF
TRACK EQUIPMENT FOR
STEAM AND ELECTRIC RAILROADS
MINES AND MILLS

Frogs
Switches
Crossings

Write for Catalog C

3

THE CHASE DRYER CARS

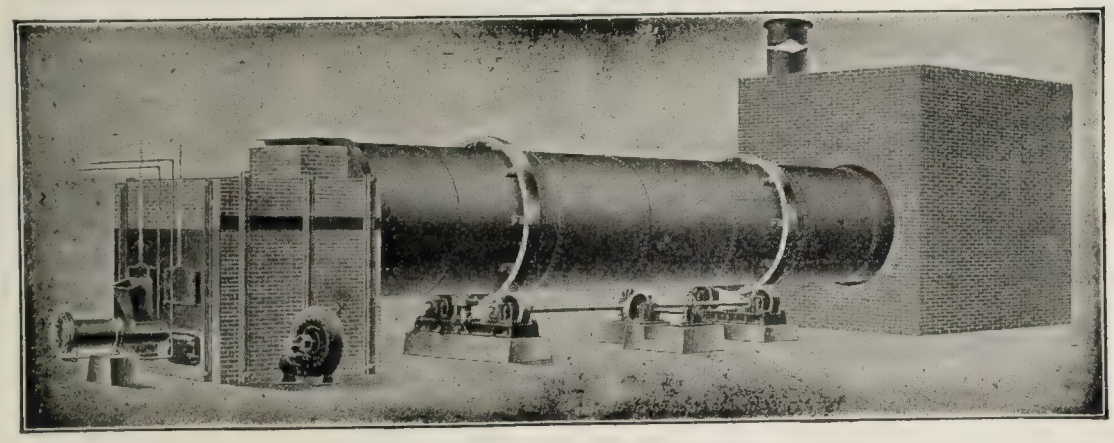
With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*



The Chase Fdry. & Mfg. Company

Columbus, Ohio



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY **WEATHER OR SEASON**

It Assures Uniform Product

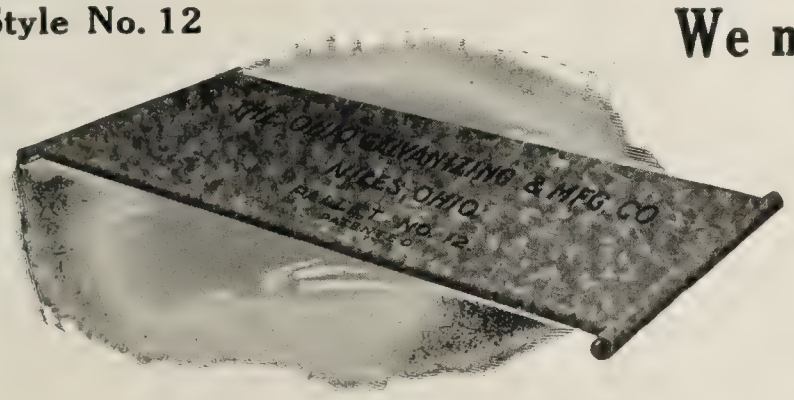
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

Build with Brick

Sheet Steel Signs

$5.00 per hundred

Write for prices of signs with your name imprinted

BRICK & CLAY RECORD
445 Plymouth Ct., Chicago

Build with Brick

Mr. Paving Brick Manufacturer!

Have you ever used any of these reprints from "Brick & Clay Record?"

"The Truth About the Concrete Roads of Wayne Co."

October 7th, 1913, issue

A 16-page folder, 9x12, in which Paul E. Green, M. E., tells the story of his complete investigation for the taxpayers of Highland Park, Ill., by whom he was sent to get the truth. Profusely illustrated. $2.50 per 100; $12.00 per 500; $20.00 per 1,000.

"Creosoted Block a Failure"

November 4th, 1913, issue

Chicago's experience with wood block graphically told in pictures and type in the form of a 4-page insert at $2.00 per 100; $5.00 per 500; $8.50 per 1,000.

"Chicago Concrete Streets a Failure"

March 7th, 1914, issue

A similar story of Chicago's experience with concrete instead of wood block as above, in the same form and at the same price. A valuable piece of literature in concrete road competition.

"Gov. Glynn (N. Y.) Urges Use of Brick Roads"

April 7th, 1914, issue

An 8-page folder in which Gov. Glynn, of New York, not only gives his views on the exclusive use of brick for the highways of New York, but backs them up with indisputable facts. $4.00 per 100; $15.00 per 500; $20.00 per 1,000.

Look up these stories in the issues in which they appeared.

Following the title of each story, the issue in which it appeared is given. If you will refer to these issues you will quickly see the value of them in reprint form as quoted above for local use in "turning the tide" in favor of brick.

Brick and Clay Record

445 Plymouth Court
Chicago, Ill.

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin.	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works.	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Nelsonville Brick Co.	Nelsonville	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin.	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING

Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS

Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING

Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE

Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES

Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE

Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS

Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES

Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE

National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK

Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK

Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE

Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co.. Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK

Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS

St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY

St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)

Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)

Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)

Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.

WALL COPING

Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS

Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS

Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)

Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)

Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)

Evans Clay Mfg. Co., Uhrichsville, O..... 3
Keller Brick Co., The, Cuyahoga Falls, O..... 8

BRICK (COMMON)

Alliance Brick Co., Alliance, O..... 8
Alliance Clay Pro. Co., Alliance, O..... 5
Alton Brick Co., Alton, Ill..... 7
Keller Brick Co., The, Cuyahoga Falls, O..... 8
Metropolitan Paving Brick Co., Canton, O..... 6

BRICK (FACE)

Alliance Brick Co., Alliance, O..... 8
Alliance Clay Pro. Co., Alliance, O..... 5
American Enameled Brick & Tile Co., New York, N. Y.... 8
Bradford Pressed Brick Co., Bradford, Pa..... 7
Hydraulic Press Brick Co., St. Louis, Mo..... 8
Keller Brick Co., The, Cuyahoga Falls, O..... 8
Kimbell Brick Co., S. S., Chicago, Ill..... 8
McArthur Brick Co., McArthur, O..... 8
Stark Brick Co., Canton, O..... 8

BRICK (FIRE)

Alsey Brick & Tile Co., Alsey, Ill..... 4
Brighton Fire Brick Co., New Brighton, Pa..... 4
Chicago Retort & Fire Brick Co., Chicago, Ill..... 3
Davis Fire Brick Co., Oak Hill, O..... 3
Dover Fire Brick Co., Cleveland, O..... 3
Evans Clay Mfg. Co., Uhrichsville, O..... 3
Maurer & Son, H., New York City..... 3
Mexico Brick & Fire Clay Co., Mexico, Mo..... 4
Queens Run Fire Brick Co., Lock Haven, Pa..... 3
Jos. Soisson Fire Brick Co., Bolivar, Pa..... 3
Southern Fire Brick & Clay Co., Chicago..... 4
St. Louis Vit. & Fire Brick Co., St. Louis, Mo..... 4

BRICK OR BLOCK (PAVING)

Alliance Clay Pro. Co., Alliance, O..... 5
Alton Brick Co., Alton, Ill..... 7
Barr Clay Co., Streator, Ill..... 7
Bessemer Limestone Co., Youngstown, O..... 5
Big Four Clay Co., Canton, O..... 5
Carlyle Paving Brick Co., Portsmouth, O..... 6
Clinton Paving Brick Co., Clinton, Ind..... 5
Danville Brick Co., Danville, Ill..... 6
Deckman-Duty Brick Co., Cleveland, O..... 5
Hamburg Vit. Brick Co., Philadelphia, Pa..... 6
Harris Brick Co., Cincinnati, O..... 5
Hocking Valley Brick Co., Columbus, O..... 6
Mayer Brick Co., C. P., Bridgeport, Pa..... 6
Metropolitan Paving Brick Co., Canton, O..... 6
Murphysboro Paving Brick Co., Murphysboro, Ill..... 4
Nelsonville Brick Co., Nelsonville, O..... 5
Purington Paving Brick Co., Galesburg, Ill..... 6
Shawmut Paving Brick Co., Shawmut, Pa..... 6
Sterling Brick Co., Olean, N. Y..... 4
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 7
United Brick Co., Conneaut, O..... 5

CLAYS (FIRE, TERRA COTTA AND TILE)

Quinn, John, Houtzdale, Pa..... 4

DEALERS

American Clay & Cement Corp., Rochester, N. Y..... 7
Bonner & Marshall Brick Co., Chicago, Ill..... 7
Kimbell Brick Co., S. S., Chicago, Ill..... 8
Globe Brick Co., East Liverpool, O..... 8

FIRE PROOFING

Metropolitan Paving Brick Co., Canton, O..... 6

RAGGLE BLOCKS

Kimbell Brick Co., S. S., Chicago, Ill..... 8

REFRACTORIES

Brighton Fire Brick Co., New Brighton, Pa..... 4
Davis Fire Brick Co., Oak Hill, O..... 3
Evans Clay Mfg. Co., Uhrichsville, O..... 3

SALT GLAZED BRICK

Stark Brick Co., Canton, O..... 8

SEWER PIPE AND BRICK

Evans Clay Mfg. Co., Uhrichsville, O..... 3

TILE (DRAIN)

Evans Clay Mfg. Co., Uhrichsville, O..... 3

TILE (FLOOR)

Pittsburg Tile Mfg. Co., E. Liverpool, O..... 7

TILE (PROMENADE)

Pittsburg Tile Mfg. Co., E. Liverpool, O..... 7

TILE (ROOFING)

National Roofing Tile Co., Lima, O..... 7

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

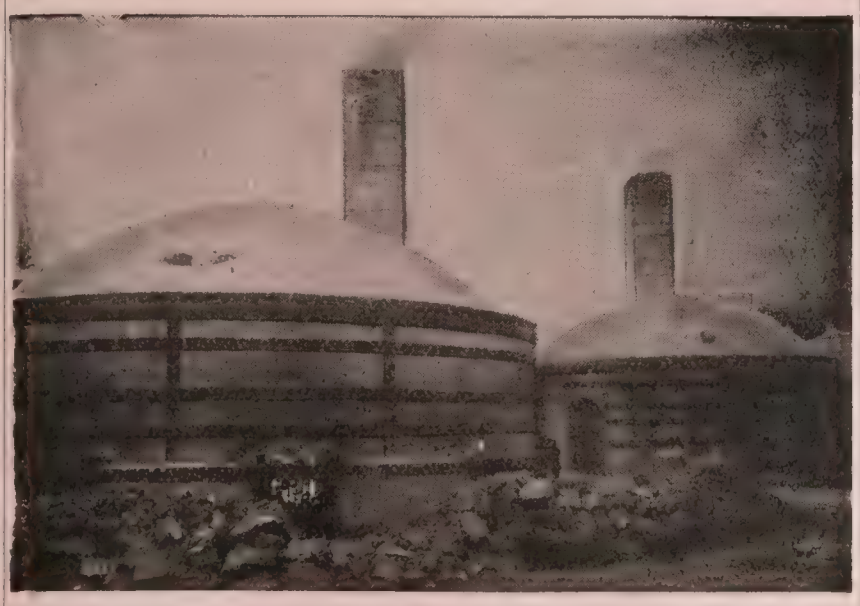
Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. **Cleveland, Ohio**

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

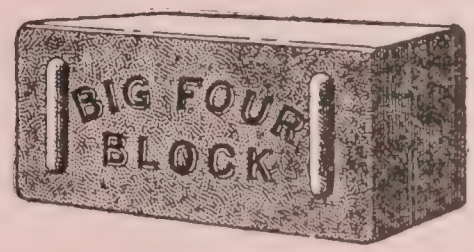
CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

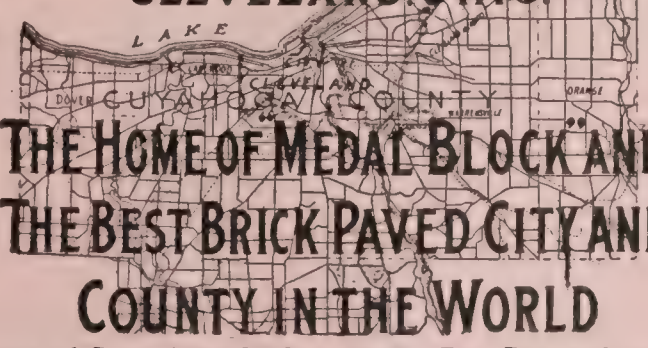
A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO

CLEVELAND OHIO



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

The Nelsonville Brick Co.

Nelsonville, Ohio



Pioneer Paving Block Manufacturers

Established 1887

Columbus, Ohio, Office—The Ruggery

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"

Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.

Terre Haute, Ind.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

---

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—

Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

L. D. BINYON, President — H. L. MATZ, Vice-President — JAS. A. HOGAN, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

Instrument perfection has been reached in our Multiple Recorders. They give a permanent Time-Temperature Record on a maximum of Six.

HERAEUS Le Chatelier PYROMETER

"The ultimate pyrometer"

Each record is absolutely and clearly defined from the others. The Instruments have a separate indicating scale for observation. The charts are continuous and have rectangular coordinates. There is no ink or other recording medium to stick or smear or to be replenished. Pen friction is entirely eliminated.

Their extremely high resistance (about 500 ohms) makes possible the use of both Indicating and Recording Instruments on the same Thermocouples, allowing the use of a central Indicating System for the burners and a Recording System for the Superintendent in his office.

With such a system better results can be obtained and the expense of an entire Recording Installation is made unnecessary.



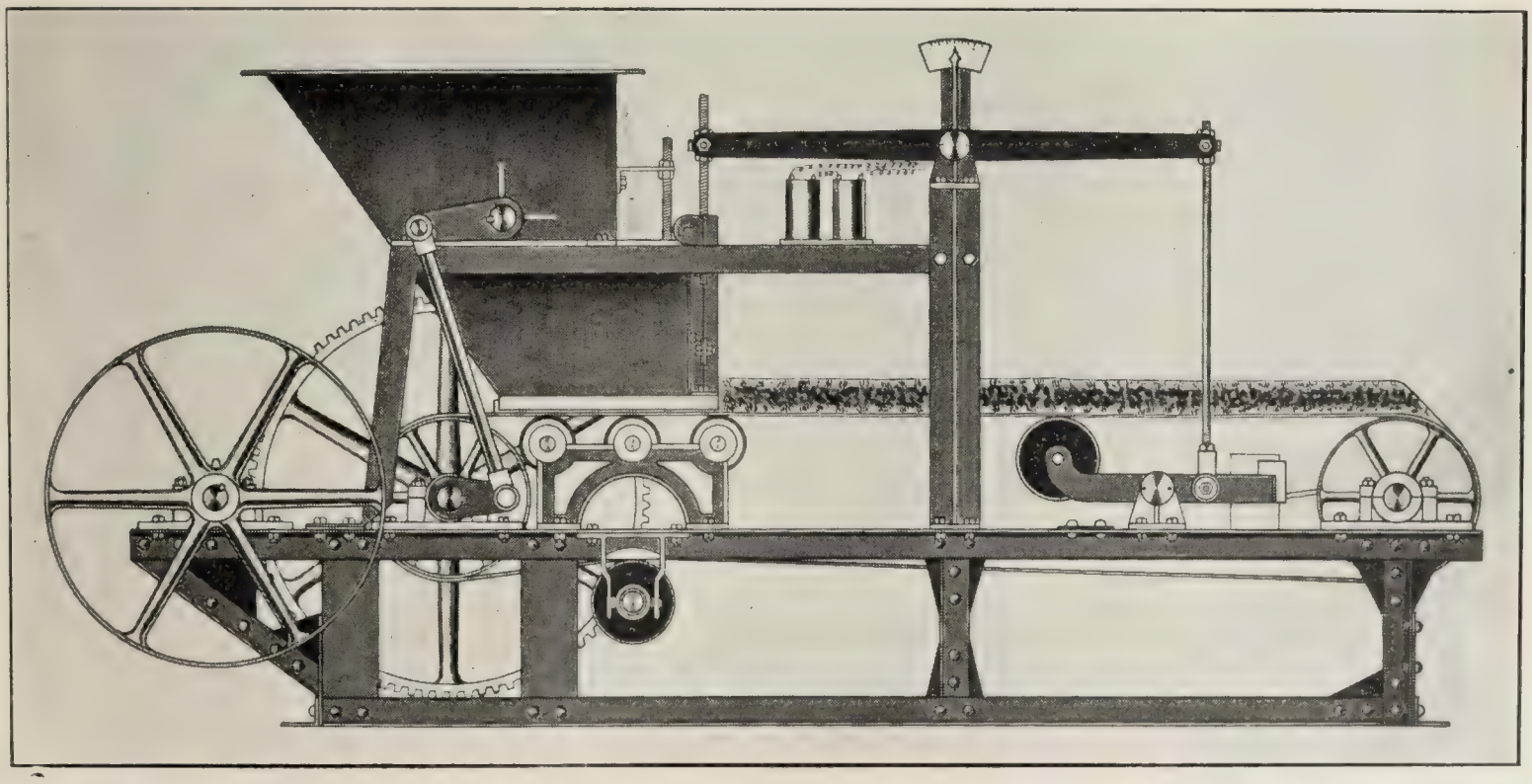
We Supply Pyrometer Installations

"MADE FOR YOU" not "MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD 30 Church Street NEW YORK

SCHAFFER POIDOMETERS IMPROVE PRODUCT AND SAVE MONEY



They unite any number of different materials in correct proportions and deliver them at the rate of a pre-determined number of pounds per minute.

Deliver the water in a pre-determined number of pints per minute.

Automatically temper the clay more uniformly than can be done by human efforts.

Cause the column of clay to flow from the machine more uniformly and with an even density.

Write for full information.

THE SCHAFFER ENGINEERING & EQUIPMENT COMPANY, TIFFIN, OHIO

Figures with a Punch In 'Em

Here is real selling dope for the BRICK and TILE men.

The most significant comparative costs of frame and Fire-Safe construction compiled since the famous Boston Chamber of Commerce test published by the old B. B. A. several years ago.

The SAFE has just taken bona fide bids from six widely known contractors upon a dwelling house in three types of construction. These types are: all frame, hollow tile and stucco and hollow tile faced with $18 face brick.

It is a convincing argument for the use of fire-safe materials. It should convince the hardest-headed nut in the country that he can't afford to "build to burn."

The average of all bids shows a difference of only 3.6 per cent between frame and stucco and only 7.2 per cent between frame and brick.

The complete plans, specifications and all bids have been multigraphed in book form and we will furnish them in quantities of twenty (20) or more at five (5) cents a copy.

Get a supply of these and go after business with them.

Society Advocating Fire Elimination

The S-A-F-E

356 Leader-News Bldg., Cleveland, Ohio

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.

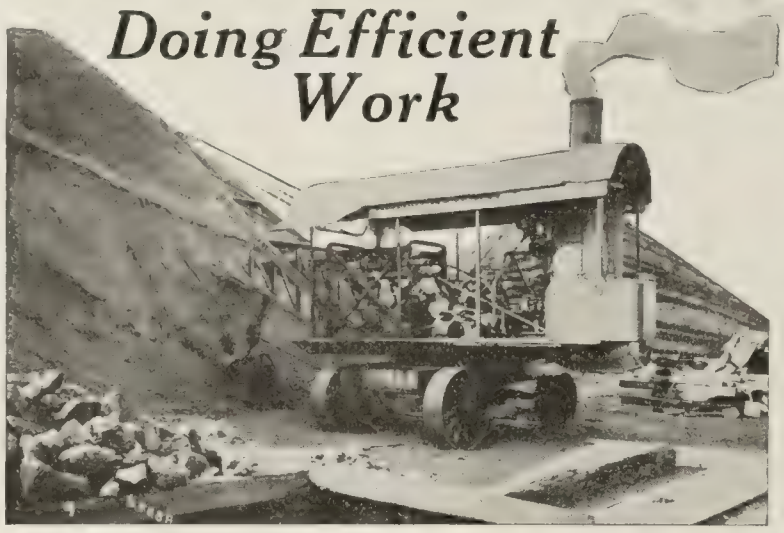


This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.
Office and Works: Macon, Georgia

Over Fifteen Years of Service and Still Doing Efficient Work



The shovel shown was sold over 15 years ago and is still in service doing efficient work in the pit of the Central Shale Brick Company, St. Louis, Mo. This proves the efficiency of the first Thew shovels, but they are, of course, not to be compared with the product now being manufactured.

Our experience for over 15 years, building 1,200 machines, has enabled us to eliminate weaknesses and develop the Thew shovel to a point of unusual efficiency.

Your simple request for facts will bring evidence from hundreds of owners, showing just what is being accomplished with the Thew shovel.

LET US SEND BOOKLET A.

FULL CIRCLE SWING
T.H.E.W.
HORIZONTAL CROWDING MOTION
ELECTRIC SHOVELS

THE THEW AUTOMATIC SHOVEL CO. LORAIN, OHIO

Get Rid of that Old Machinery!

It is idle capital where it stands and the longer it lays there, the less valuable it becomes.

Turn it into real money, while the turning is good. Write up that little ad TODAY and tell us to put it in our classified columns NEXT ISSUE.

Brick and Clay Record **Chicago**

Another Plant Using Brown Pyrometers



Recording Instruments in Office.


View of Kilns.


Indicating Instruments in Business House.

The Metropolitan Paving Brick Co., Canton, Ohio, has equipped their Imperial Plant with Brown High Resistance Pyrometers. Indicating instruments inform the burners of the exact temperature at each end of the fifteen rectangular kilns, while recording instruments in the Superintendent's office make a record of the temperature, day and night. Brown Pyrometers are making good at hundreds of plants and the list is constantly growing. Why not give them a chance at yours?

Our 64-page catalogue is sent for the asking.

THE BROWN INSTRUMENT CO.

(ESTABLISHED 1860)

PHILADELPHIA, PA.

NEW YORK PITTSBURGH CHICAGO

KING MIDAS

Had he owned and operated a Paving Brick Plant, or any other kind of clay products plant, at the time he received his proverbial golden touch, he would not have had to exercise his power, if he had operated a Powell Patented Shale or Clay Planer.

The remarkable saving in cost of getting in shale or clay, would doubtless have satisfied Midas, so that he would have put his touch on some other part of the plant other than the bank.

Know the Arbuckle first



For proof of the above statement, ask the man who operates one.

Having his raw material **cut up into fine pieces** and **automatically loaded into cars** for haulage to storage bin, at a very **small cost per ton,** is an item which would be very much appreciated by most manufacturers.

Advantages which follow the above results are: **Reduction of wear and tear on Dry Pan from one-half to three-quarters; the saving of all pit laborers, with the exception of one,** who is required to operate the Planer; **a perfect mixture of the bank from top to bottom;** a saving of all explosives formerly used; **increased capacity** and **better product.** These are also items wnich the manufacturer would appreciate.

The Goose that laid the golden egg every day "did not have anything on" the Powell Patented Shale and Clay Planer; built in sizes to handle your proposition from a two-foot surface clay bank to a hard shale bank 100 feet high. Any capacity delivered that is required.

Correspondence Solicited.

ARBUCKLE & COMPANY

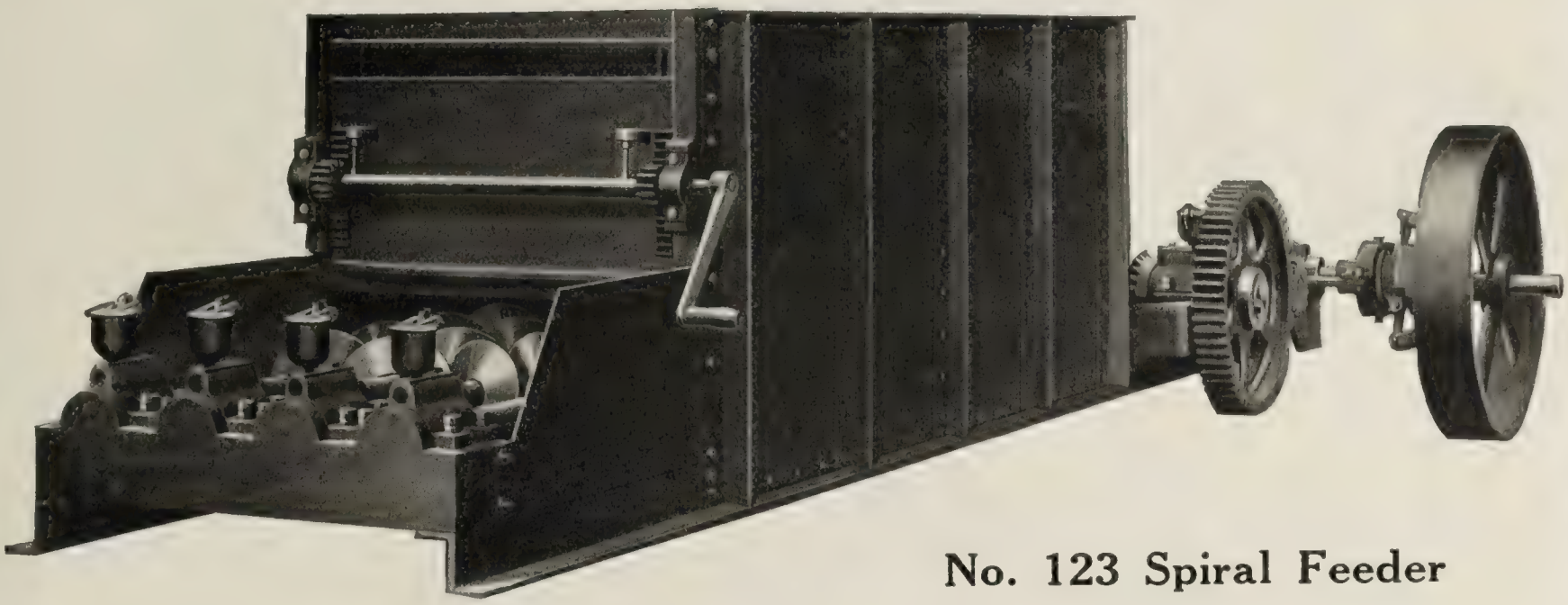
EXCLUSIVE MANUFACTURERS

Rushville, Indiana, U. S. A.

Infringements will be promptly and vigorously prosecuted

IF MARKED **BREWER** *IT'S GOOD*

Compare the specifications of this Spiral Feeder with those of any other and you will quickly see why it is better. Take these items for example. Weight, 5,700 lbs. Spiral shafts 3 in. dia. Intermediate shaft 3 in. dia. Pulley shaft 2½ in. dia. Compare weights and specifications when you compare prices.



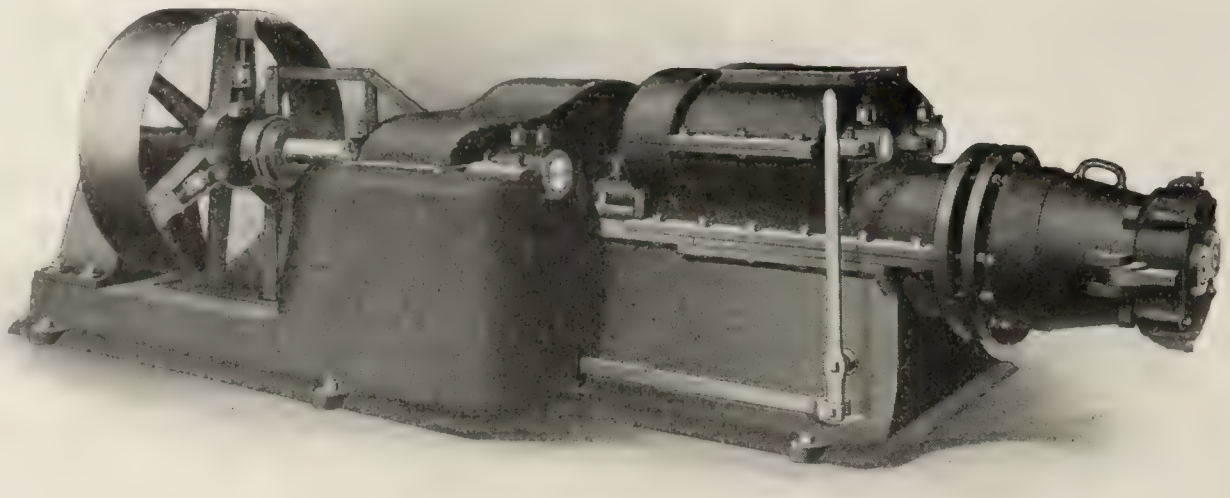
No. 123 Spiral Feeder

All Brewer Machines are rigid and heavy. Sometimes they may *seem* higher in price, but if you will look into their construction you will easily see that they represent *greater value* for the price than any other line.

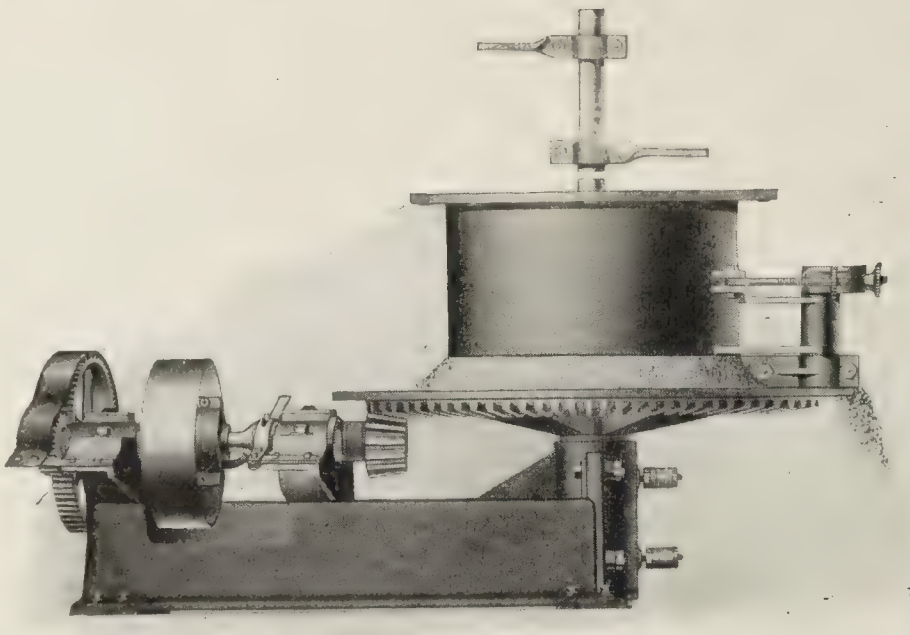
Ask For Catalog

H. BREWER & COMPANY

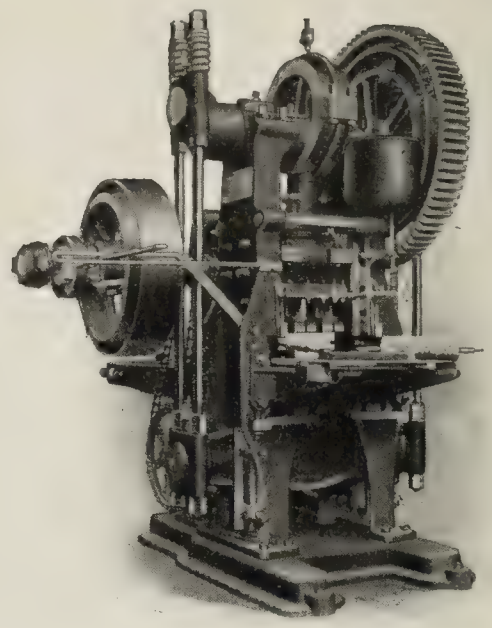
Tecumseh, Michigan



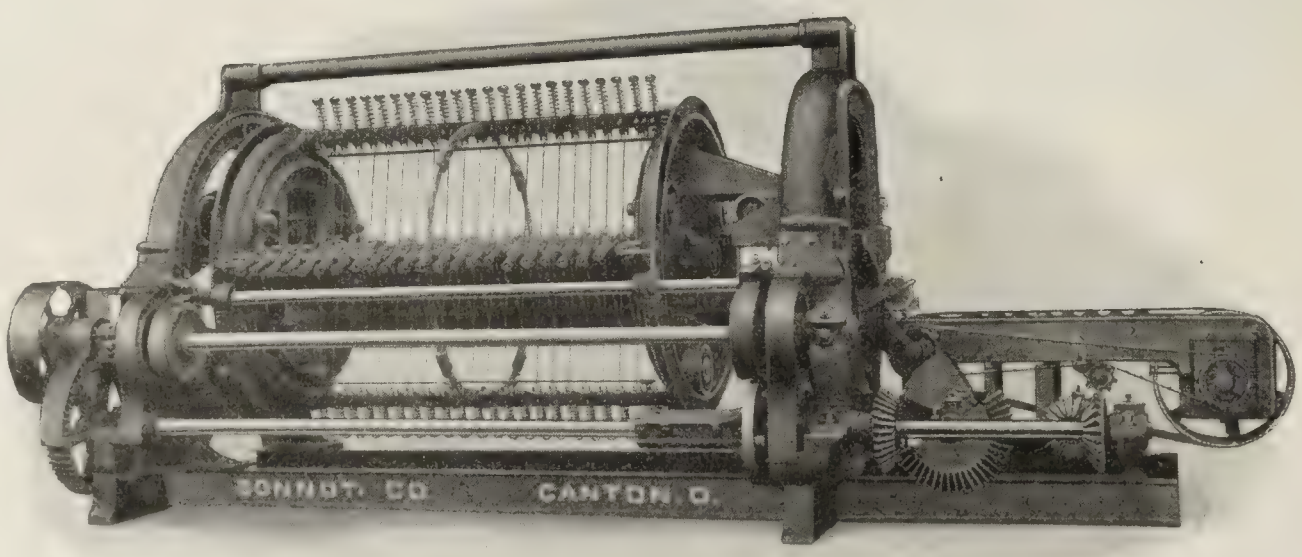
NO. 17 HOLLOW-WARE MACHINE, capacity 100-125 tons per day.



CLAY FEEDER



BONNOT REPRESS



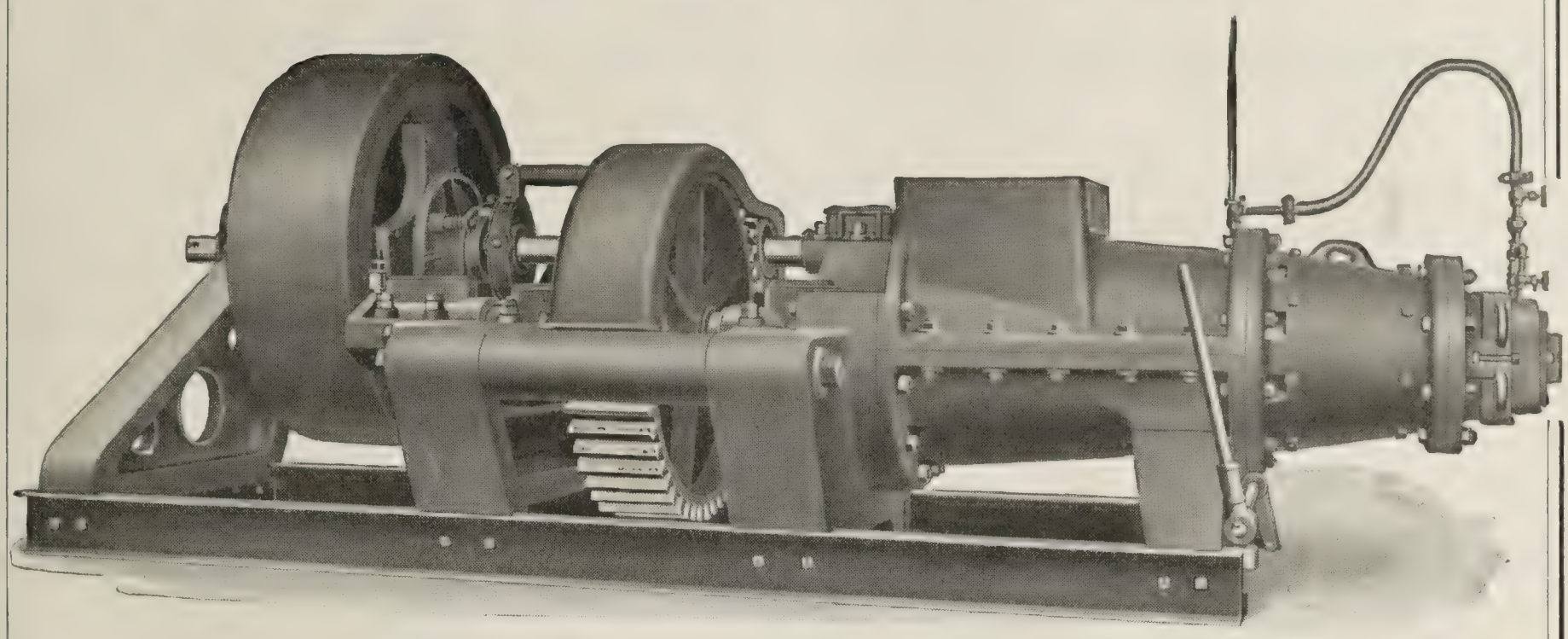
ROTARY AUTOMATIC CUTTING TABLE

THE BONNOT COMPANY
CANTON, OHIO

909 N. Y. Life Bldg.
KANSAS CITY, MO.

211 Higgins Bldg.
LOS ANGELES, CAL.

THE WEAR IS WHERE?



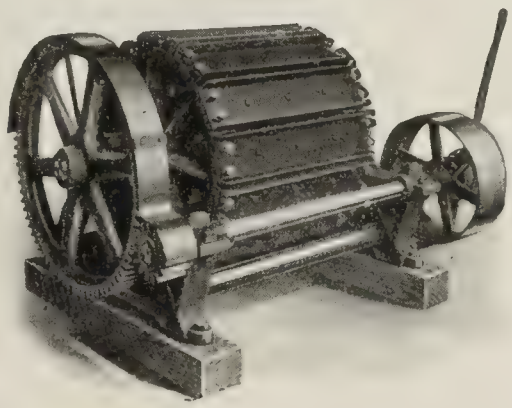
Model GC Auger Brick Machine

If you have ever really studied your repair problem—actually analyzed your repair account—you found this to be true:

A large percentage of the expense is due directly to fast-running gears—not alone to the cost of the gears themselves, but to the loss of time and labor necessary to put them in place, and to the vibration caused by the high speed at which they run.

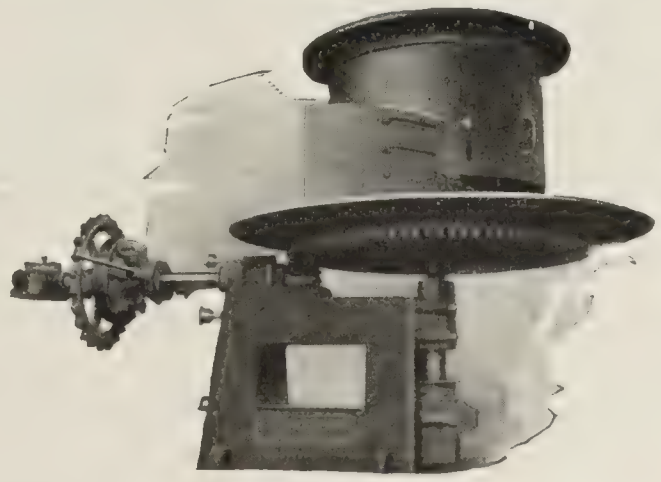
By eliminating all fast-running gears you not only reduce the actual repair cost, but you reduce the number of times it is necessary to make repairs, and you also reduce friction, vibration, noise and power consumption.

The GC Machine has but two gears—neither running faster than 125 R.P.M. That's one of the reasons it's a **satisfactory** machine.



Standard Rattler

This rattler complies fully with the N. P. B. M. A. specifications. It will be found of great assistance to paving brick manufacturers and engineers.



E18 Disc Feeder

This feeder gives a perfectly uniform feed into the pug chamber, which shows its effect in the molding, drying and burning, and in the life of the machinery.

E. M. FREESE & COMPANY

130 South Street GALION, OHIO

Dependable Machinery of Proven Efficiency

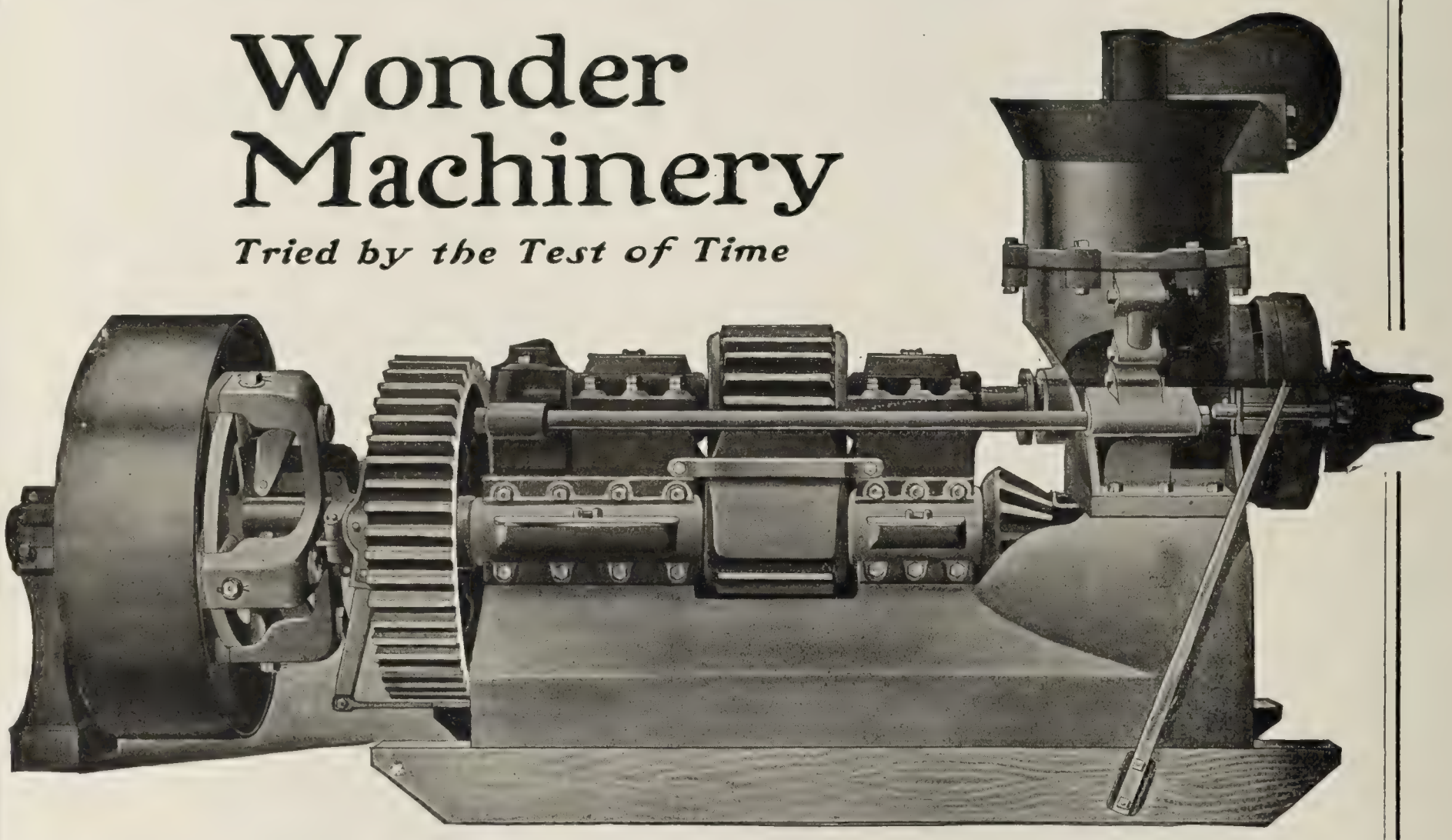
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

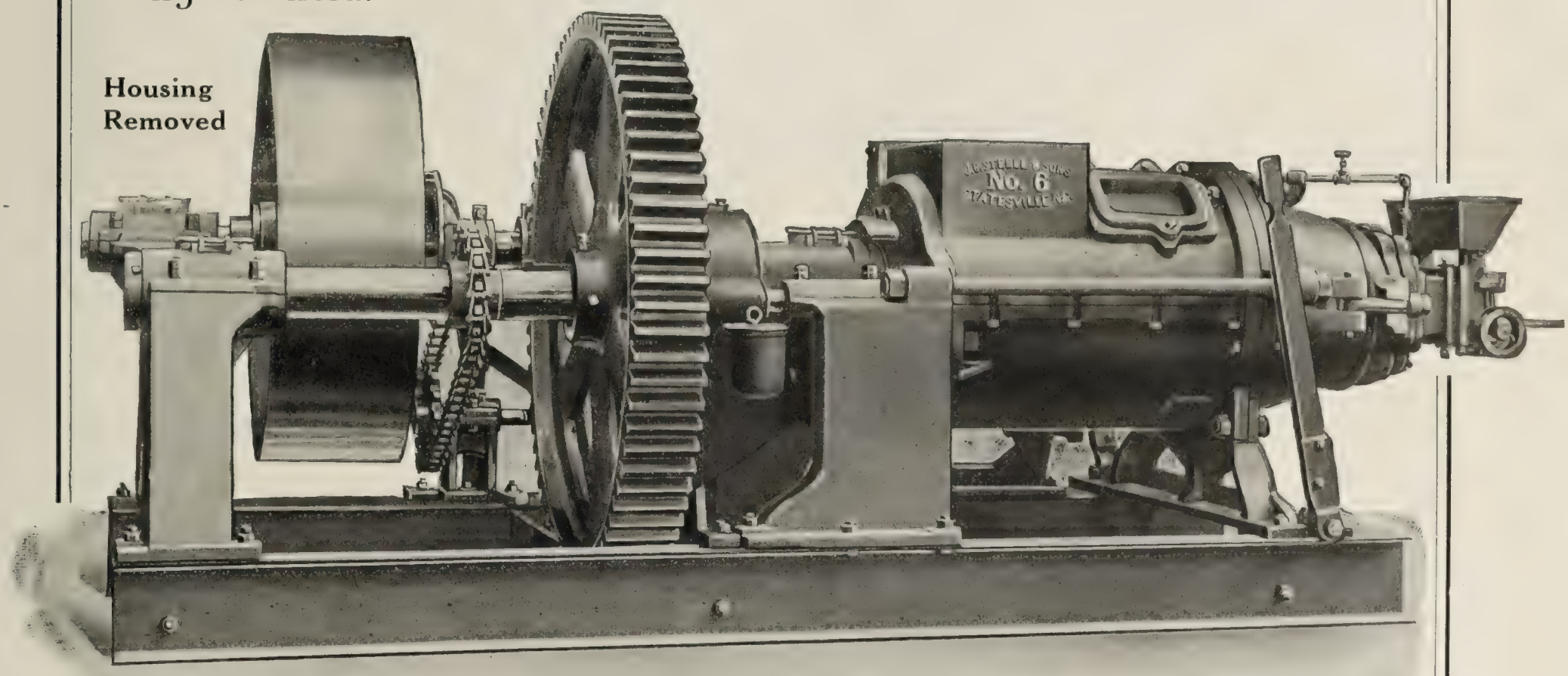
The Steele Clay Machinery

Is the Result of Over Twenty-five Years of Team Work

The combined and continuous effort of our Organization in meeting the complex problems of working a great variety of material, from very short sandy clays to the most obstinate clays and shales, is producing most satisfactory results.

In many cases the superior quality of goods produced by our customers has caused the adoption of our machinery by their competitors.

Experienced service and fair treatment is continually widening our field.



J. C. STEELE & SONS, Statesville, N. C.

GEO. H. SMITH, Kansas City, Mo., Western Agent

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

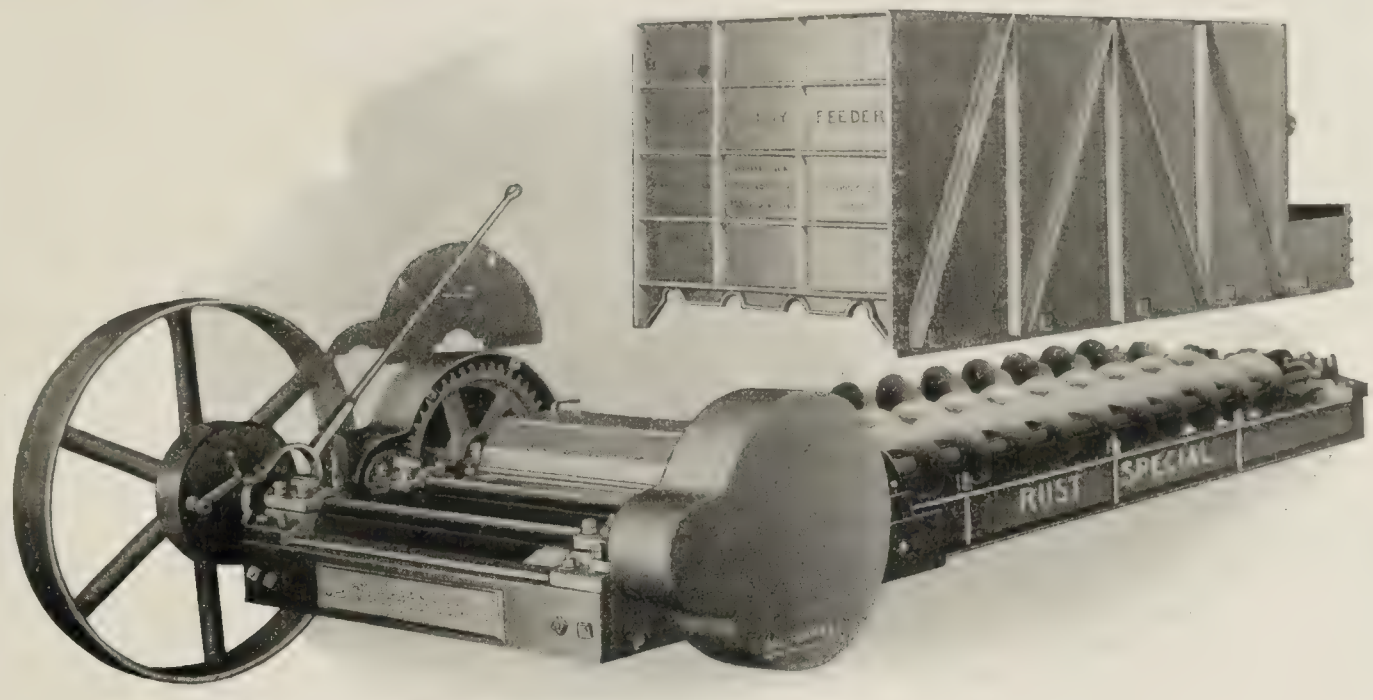
Will P. Blair, Secretary

Cleveland, - Ohio

When You Buy Machinery
Do You Always Get Service?

Do you get just what you are paying for—does your machine or machines live up to the promises of the sales agent?

The Rust Clay Feeder Fulfills Every Claim Made For It



Five New Points in the NEW Rust

1: There is no exposed gearing. Every gear runs in oil, carefully housed from the dirt and grime, and insures full efficiency of your machine and removes danger of accidents.

2: The eight gears that drive the spirals: These are also housed in oil and are made of the highest grade crucible steel.

3: The large gearing: This is made of semi steel, built doubly heavy for any duty that may be demanded of it.

4: The drop bottom: This is hinged at the center and permits the operator to drop out the material under any two of the spirals and reach them quickly.

5: The four spiral shafts: These are built extra large and strong and increase capacity of the "Rust" more than 50 per cent.

It is the last thing in clay feeders, combining all the good points that Rust feeders have had for the ten years they have been on the market, with the new features that make it the "Efficient" clay feeder.

Our claims are not so many printed words, but they are backed up by the actual results produced in active service.

We also have a full line of efficient brick and tile machines, disintegrators, pugmills, winding drums, grates, rotary soot blowers, etc. Remember that every machine that bears the "Marion" name represents untiring labor and ceaseless research for correct and scientific design by competent engineers—the skill of capable machinists—the highest quality of material.

When you buy Marion Machines you always get **service.**

What the NEW Rust Will Do

Cut out the labor of two men, thus saving you $1,350 a year. This means the Rust Special will pay for itself before the year is over, and give an annual profit of nearly $1,000.

It will temper your clay perfectly, thus improving your product. Just set the Rust Special at the speed you require, gauge your water feed accordingly, the machine will do the rest.

It feeds your clay regularly – speeding up your plant. Determine the capacity at which your pugmill and auger will run to get the highest efficiency, set the Rust Special and leave it alone—the feed will not vary ten brick per hour.

The Marion Machine, Foundry & Supply Co.

P. O. Box 395 Marion, Indiana

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—Ceramic graduate. Large plant in middle west desires to employ ceramic graduate, one with experience in fire brick plant preferred. Must be able to do own analyzing, take charge of burning and handle labor. Splendid opportunity for right man. Address: 4-H, care of "Brick and Clay Record". 4-1.

WANTED—Experienced fire brick salesman. Give references, experience in detail, and salary wanted. Address: 4-E, care of "Brick and Clay Record". 4-1.

WANTED—POSITIONS.

OPPORTUNITY FOR REFRACTORY MANUFACTURERS, FINANCIERS, etc.—First-class specialist in clay, gas and combustion line, having been employed many years as chief engineer and manager in first-class brick plants, with construction and building departments for all industrial firing installations, special for the gas, coke, iron, steel, chemical, etc., industries; with extensive experience in the manufacture of all high-grade refractory materials, modern smokeless heating with all fuels for different purposes, wishes employment as manager or chief engineer, or connection with manufacturers, financiers, etc., to erect, install or enlarge a present department or plant. Have personally made many improvements, application having been made for patents on same. Highest references, thoroughly familiar with all correct modern firing in the whole technical firing industry, in connection with refractory manufacture. Address: 4-A, care of "Brick and Clay Record". 4-1-P

WANTED—Position as superintendent of clay drain tile or brick plant by practical man who can produce results. Twenty-five years' experience. Address: A. O. Martin, Lynn, Ind. **3-2-3P.**

WANTED—Position as superintendent of brick plant. Experienced in all leading clay lines. Employed, but desire change. Best references. 3-BA, care of "Brick and Clay Record." 3-2-1P.

POSITION WANTED—By clay and kiln expert, specialty roofing tile. Address, 4-B, care of "Brick and Clay Record". 4-1-P.

WANTED—Position as superintendent or manager of clay plant. Have 20 years' experience in manufacturing and marketing paving brick, pressed brick and hollow ware. Can design and erect complete plants. A1 references. Address: 3-BN, care of "Brick and Clay Record". 3-2-1P.

CLAY WANTED

WANTED—Clay that burns red, suitable for manufacturing flower pots. Must be within easy shipping distance of Chicago. Address, Geo. Keller & Son, 2618 Herndon St., Chicago, Ill. 4-1

EQUIPMENT WANTED.

WANTED—Lot of 2-deck dryer cars, gage 24 inch between flanges, to carry decks 3 ft. by 6 ft. 4 or 6 inches. Ohio Clay Product Co., Diamond Bank Bldg., Pittsburgh, Pa. 4-1.

WANTED

WANTED—To hear from owner of good brick and tile plant for sale. State price. D. F. Bush, Minneapolis, Minn. 4-1-P.

SPECIAL OPENING.

WANTED—Party with money to finance best brick proposition in North America, bar none. Can have full management. Write: F. Millican, 1261 Granville St., Vancouver, B. C. 4-1-P.

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—The Fairfield Brick & Tile Factory. Cost $37,000 complete, and suspended on account of lack of management. Only run short time and can be bought cheap and on easy terms. 7.51 acres—558 ft. C. R. I. & P. railway trackage. Building 3 stories, 50x120 ft. Boiler room 32x50 ft; dirt room, 32x50 ft.; drying room 40x100 ft.; office 16x24 ft. 150 three-deck dryer cars; cement house, 32x50 ft. Three 24-ft. down-draft kilns. 55 ft. stack. One 30 ft. down-draft kiln, 60 ft. stack; boiler stack, 60 ft. 125 h. p. Corliss engine; 85 h. p. boiler. J. D. Fate brick and tile machinery. 25,000 ft. steam drying pipes. 200 electric light dynamo. Reservoir—15 ft. deep. City water. E. R. Smith, Trustee, Fairfield, Iowa. 3-2-1P.

FOR SALE—First-class, medium-sized plant, suitable for sanitary ware, white ware, or stoneware. Practically good as new, thoroughly equipped. Now in operation. Best built plant in Ohio. Plenty of labor; gas fuel. Shipping facilities the best. Will be sold cheap, if at once. Address: 4-C, care of "Brick and Clay Record". 4-1

FOR SALE—Brick, drain and building tile plant. Plenty of clay and red shale deposits in immediate vicinity. Only yard making tile. Owing to partner having other business, sale is necessary. Address: P. O. Box 416. Santa Barbara, Calif. 4-1-P

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—A good brick and tile factory in best city in Central Illinois. No competition. Will sell for one-fourth its worth, cash or terms if taken quick, to close up business settlements. Address: 4-D, care of "Brick and Clay Record". 4-2-P.

FOR SALE—Sand-mold brick plant with 58 acres clay land. Located near Minneapolis, Minn. All newly rebuilt, price $12,500.00. Address: Mrs. W. C. Pike, 602 East 25th St., Minneapolis, Minn. 3-2-3P

SALE OR LEASE—Fully equipped stiff-mud brick plant; two down-draft kilns. Demand for output; $12.00 per m. at yard. Broghamer & Pitman, Chadron, Neb. 4-1

FOR SALE—Soft-mud plant, 30,000 capacity. Only plant in city of 25,000. Address: Bromilaw Brick Co., Alexandria, Va. 3-2-3.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR LEASE—FIRE CLAY LAND.

FOR LEASE—We offer a large amount of Kittanning fire clay for lease on royalty basis. Railroad is built through the property. For further information inquire of H. A. Colwell, Kittanning, Pa. 3-2-3P.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—One J. D. Fate combined Hummer brick and tile machine, complete and in fine shape. Also 165 crown covers and lids. Make us an offer. Freese Bros., Janesville, Wis. 4-1

REVOLVING STEAM SHOVELS
For Sale

Thew No. 1, with 1¼ yd. dipper.
Thew No. 0, with ⅝ yd. dipper.
Bucyrus 18-B, with ⅞ yd. dipper.
Bucyrus 14-B, with ⅝ yd. dipper.
All on traction wheels and in first-class working order.

Wm. B. Grimshaw Co.,
690 Drexel Blvd. Philadelphia, Pa.
3-2-3P.

BARGAIN LIST OF SECOND HAND MACHINERY.

Repaired and Ready for Shipment.

1—150 H. P. Non-Condensing Steam Engine.
2—6 H. P. Upright A B Fan Engines.
15—12 to 15 H. P. Various makes, slide valve steam engines.
10—15 to 35 H. P. Various makes, Gas Engines.
1—54" x 16' Atlas Boiler.
2—36 x 15 A B Ventilating Fans.
1—24 x 12 Pressure Blower.
1—No. 7 Sturtevant Blower.
2—C & A Potts Soft-Mud Brick Machine.
1—Ross-Keller 4 Mould Dry Press Brick Machine.
1—Penfield 6 Mould Dry Press Brick Machine.
1—Raymond Automatic Cutter.
1—Hummer Jr. Fate Brick and Tile Machine, with full set of building block dies.
1—100 M Arbuckle Horizontal Pug Mill.
1—100 M Michigan Horizontal Pug Mill.
2—Second hand Rust Clay Feeders.
1—20 M Kells Brick Machine and cutter.
1—C. & A. Potts Disintegrator, good condition.
1—Bechtels Automatic Side Cutter.

New Machinery at Special Prices.

1—100 M Stiff-Mud Brick Machine.
1— 30 M Stiff-Mud Brick Machine.
1— 20 M Stiff-Mud Brick Machine.
3—25 M Disintegrators.
1— 50 M Disintegrator.
1—100 M Disintegrator.
400—New Brick & Tile Barrows.
10—New Spring Trucks, Complete.
2—Bechtels Automatic End Brick Cutters.
4—Iron Frame Winding Drums.
4—Wood Frame Winding Drums.
3—10' Clay Elevators.

Above machinery offered subject to prior sale at reduced prices.

MARION MACHINE FOUNDRY & SUPPLY CO.
P. O. Box 395. Marion, Indiana.

A FEW OF OUR BARGAINS in first-class, slightly used clayworking machinery:

10 steam engines, all sizes from 5 h.p. vertical to 450 h.p. Corliss.
6 H. T. boilers, 40 to 150 h.p.
12 motors, different makes, from 1 to 125 h.p.
8 steam pumps, 1½ in. to 6 in. discharge.
6 boiler feed pumps.
1 Brewer machine, with dies and cutting table (made only one kiln of tile).
1 9-ft. Frost dry pan, used only 30 days.
1 Ross-Keller 6-mold dry press and disintegrator, excellent condition.
1 Fate smooth roll crusher.
1 Revolving dryer and automatic stoker, 66 in. by 32 ft.
1 American 12 ft. pugmill and one 9 ft. Freese.
2 Dry pans—9 ft. Frost, good as new, and 8 ft. Frost.
1 Freese A Special brick machine with rotary side cutter.
1 Fernholtz clay plow and clay gatherer.

Large stock of pulleys, shafting, belting, pipe, valves and fittings of all kinds.

Two fully equipped brick plants for sale, good locations.

Let us know what you need; we can save you money. Address: Box 494, Clayworkers' Exchange, Springfield, Ill. 3-TF.

Brick and Clay Record Classified Ads Are Result Producers

FOR SALE—One Andrus 4-mold dry press machine that has made only 400,000 brick—practically new. $1,200.00 on car, Memphis. One 5-mold (can be changed to six) Hercules soft-mud machine. One 6-mold Hercules soft-mud machine. Overhauled and in good condition. $250 each on cars, Memphis. One No. 0 late model Thew steam shovel that has been worked about six months and in good condition; $2,300.00 on cars, Memphis. Address: South Memphis Brick Co., Memphis, Tenn. 3-2-TF.

FOR SALE—Practically new, one 40 h.p. and one 60 h.p. high pressure boiler, 100 h.p. slide valve engine, 9 ft. American dry pan, automatic feeder, clay elevator, 8 ft. pugmill, No. 88 Brewer brick and tile machine, Fayets end cutting table, Brewer tile cutting table (10 and 12 inch), board delivery side cutting table, 6-track Standard steam dryer, 102 cars, centrifugal pump with gasoline engine attached, Pulsometer steam pump. W. E. Lyon & Co., Carthage, Ill.

FOR SALE—One 60 h. p. boiler, one 50 h. p. engine, one Cookson feed water heater, one American rotary dryer, one winding drum and cable, American pulverizer No. 30, 126 double-deck dryer cars, Hercules brick machine, five steel dump cars, 900 steel pallets, two transfer cars, one 4½-ton gas motor. Also belts, shafting and pulleys. Address: Box 33, Muncie, Ind., for particulars. 4-1-P.

FOR SALE—One paving brick testing rattler, made strictly to conform with the specifications and requirements of the National Paving Brick Manufacturers' Association. Brand new, never uncrated, with complete outfit of shot and counter. Price low. Address: J. S. Miller, Bolivar, Pa. 4-1

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

FOR SALE—Large size Freese cutting table complete. Small air compressor of the Ingersoll-Rand make, and McGowan cold water pump. Address: P. O. Box 804, Portsmouth, Ohio. 3-2-2

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Ross Keller 6-mold dry press and disintegrator. Nearly new. Can be bought for one-fourth original cost. The Shorey-Willis Brick & Supply Co., Cincinnati, O. 3-2-TF.

FOR SALE—No. 1 Union brick machine and No. 16 rotary cutter made by E. M. Freese & Co., Galion, O.; replaced with larger capacity of same make. Good for 40,000 brick per day. Price right to move quick. Address: Richlands Brick Corporation, Richlands, Va. 4-3.

FOR SALE—133 Standard 24-inch gage, soft-mud brick, rack dryer cars. These cars are of best make and are in fine condition. Will be sold very cheaply as we do not make soft-mud brick. Terre Haute Vitrified Brick Co., Terre Haute, Ind. 4-1

FOR SALE—Berg 4-mold dry press. A1 condition, made only 500,000 brick. Also ten special wheel trucks, and new set dies and liners. Price right for quick sale. Address: Richlands Brick Corporation, Richlands, Va. 4-3.

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Vogan, Franklin, Pa. 4-TF

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

RAILS

SMALL ORDERS GIVEN SPECIAL ATTENTION

40, 56, 60, 70, 75, 80, 85 & 90 lb.

RELAYING RAILS
FOR SIDINGS, SPURS, Etc.

8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.

NEW STEEL RAILS
FROGS AND SWITCHES

SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment

RICHARDSON & CO., Inc.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

WE WILL PAY

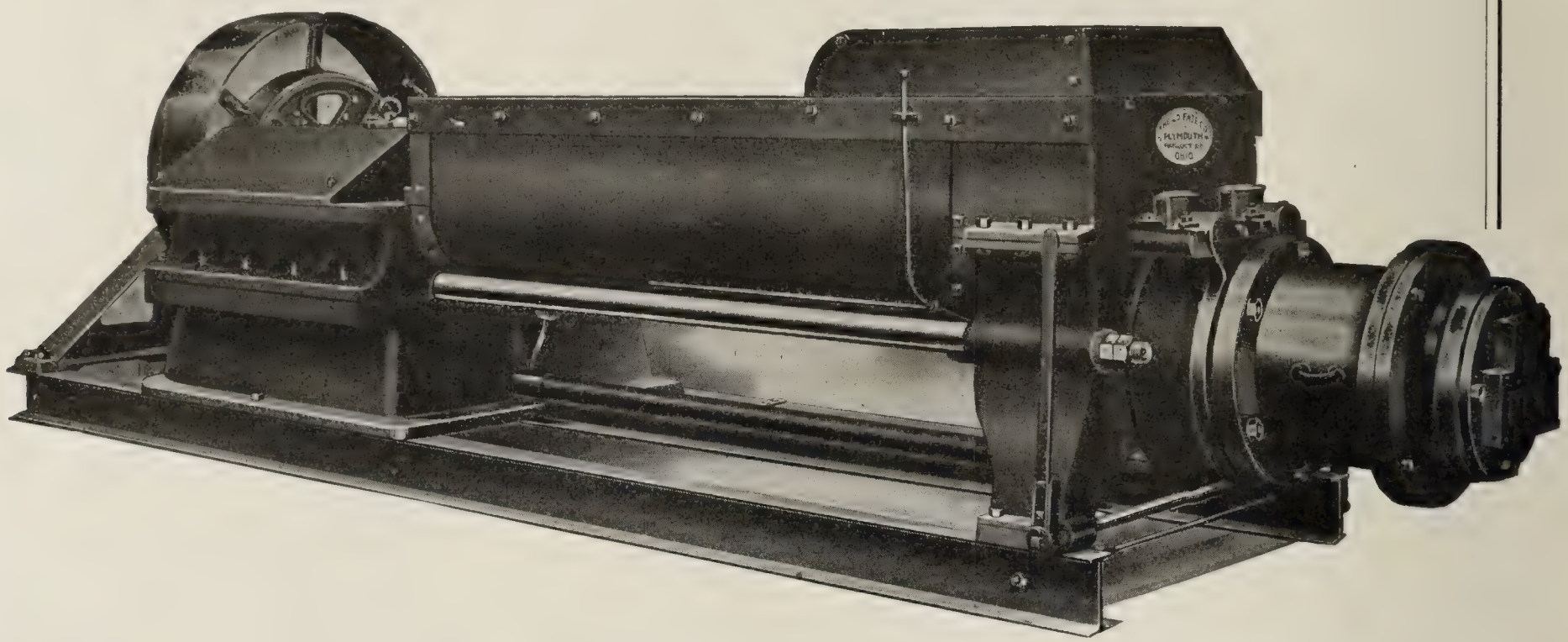
Twenty-five cents each for copies of November 17, 1914, issue of "Brick and Clay Record". If you wish to dispose of your copy, address a postal to the Subscription Department, at once, advising them to this effect, and the price will be sent you—you to forward the copy by return mail. Only "whole" copies, in good condition, will be accepted.

BRICK AND CLAY RECORD.
445 Plymouth Court, Chicago, Ill.

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

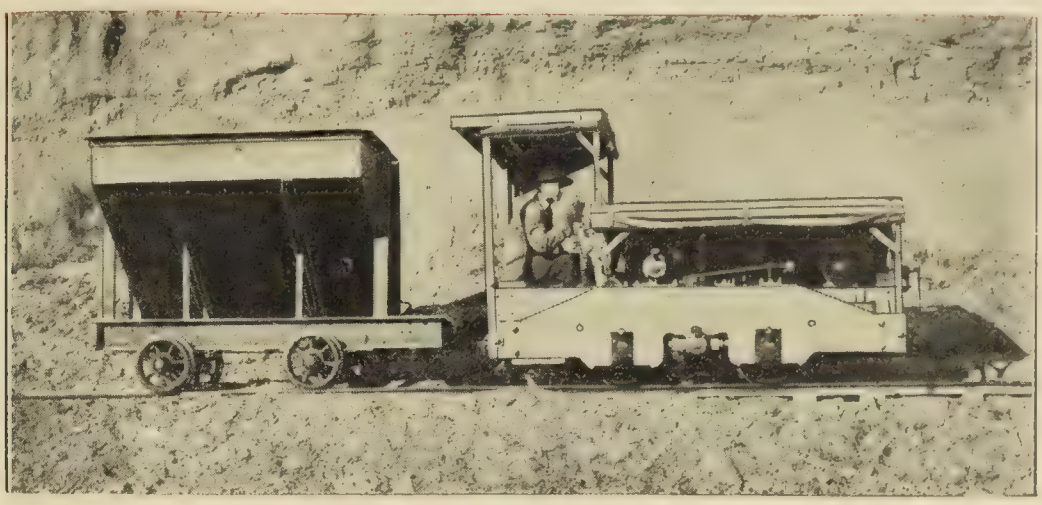
Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

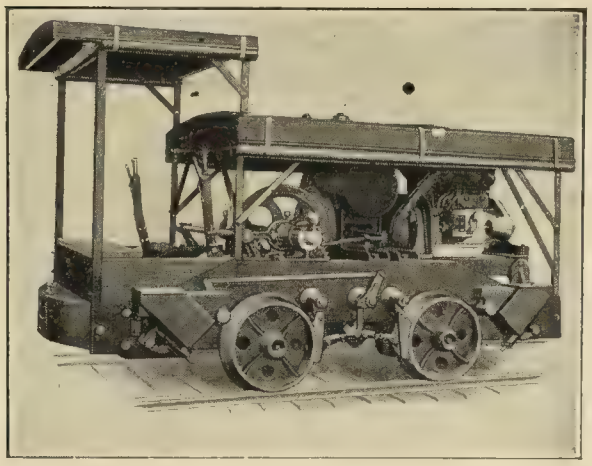
The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.





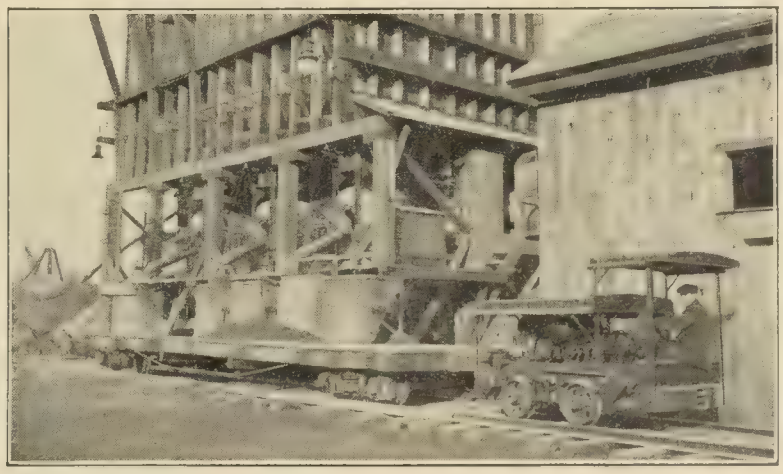


Plymouth Gasoline
Industrial Locomotives

Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.





The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight-year-old boy who runs one.

The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative



Vincent Clay Products Company

MANUFACTURERS OF
VITRIFIED DRAIN TILE AND BUILDING BLOCKS
617 FIGBY NATIONAL BANK BUILDING

FORT DODGE, IOWA.

Nov.
Seven,
1914.

Mr. S[illegible] R. Allen,
c/o American Blower Co.,
Chicago, Ill.

My dear Mr. Allen:-

We have finished the installation of the fourth Sirocco Fan and it is working the same as the balance of our fans that we installed under your direction to our entire satisfaction. The two fans that we put in first have been in constant operation for a year and a half in operating our continuous kiln and have not given us any trouble at all. The third fan operating our dryer has only been in operation about six months, but it is working out just as you said it would and I do not know of any change that we could make that would increase its efficiency.

We wish to thank you for the plans that you made for our installations and the care that they showed on your part by the way that they worked out.

Yours very truly,
VINCENT CLAY PRODUCTS COMPANY.
J. A. Vincent

MBM/AS.

A *Sirocco* TRADE MARK.

Waste Heat Drying System

Will do as much for you as it has done for **Vincent Clay Products Co.,** and for scores of other brick and clay plants all over the world. Let us put you in direct touch with some of them.

You Ought to Use a "Sirocco" TRADE MARK.

Because It Will Save Power—Time—Money

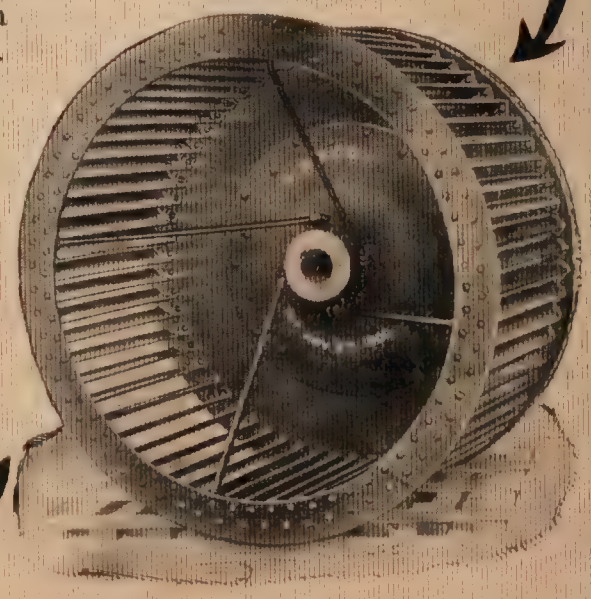
The construction of the "SIROCCO" Fan, with 64 steel plates (instead of 8 to 16 as others are made) means a saving of 30 to 45 per cent over the power required to operate the ordinary fan systems.

The "SIROCCO" dries far more rapidly than the old direct steam or furnace drying system—hence it saves you time.

The "SIROCCO" takes the waste heat from your kilns and utilizes it to perfectly dry your product—thus increasing the capacity of your present kiln equipment—and this means greater output with increased profits.

Ask for Bulletin No. 2102

We have an engineering force to study your problems. They do this without cost or obligation on your part. No matter where you are — we are at your service.



AMERICAN BLOWER COMPANY

DETROIT, MICHIGAN, U.S.A.

"It's All in the Fan"

BRICK and CLAY RECORD

"SCANDINAVIA"
SOLID WOVEN
COTTON BELTING

THE STANDARD TEXTILE
BELT *of the* WORLD

SCANDINAVIA BELTING CO.
MAIN OFFICE: 106-108 READE ST., NEW YORK

BRANCHES

Atlanta, Boston, Buffalo, Chicago, Cleveland, Easton, Pa., Pittsburgh,
Los Angeles, San Francisco, Portland, Ore.

Canada—Federal Engineering Co., Ltd.—Toronto, Montreal

Vol. XLVI, No. 8 Chicago April 20, 1915

WELL ER-MADE

A Friction Clutch for Every Purpose

WELL ER-MADE

FRICTION CLUTCHES

Catalogue No. 27

Weller Mfg. Co.
Chicago

DO NOT FAIL TO SEND FOR IT.

It tells many things that every Brick and Clay working plant should know about.

Free for the Asking and Well Worth Asking For

Write Today for Catalogue J-27

We make more types of Friction Clutches than any other manufacturer.

Our new catalogue just off the press tells all about these various types of clutches.

Tells the Horse Power, Weights, effects of high speed—how to avoid and remedy many of the common clutch troubles.

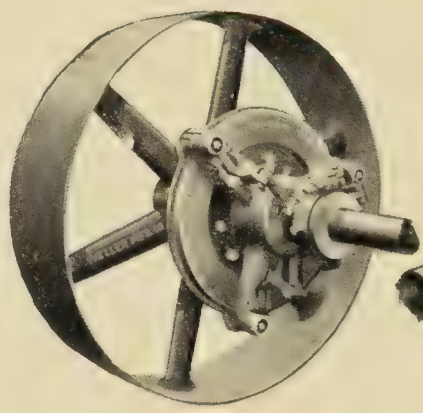
Tells the Horse Power of Pulleys, Belts, Sheaves and Ropes in a different and clear method which anyone can use.



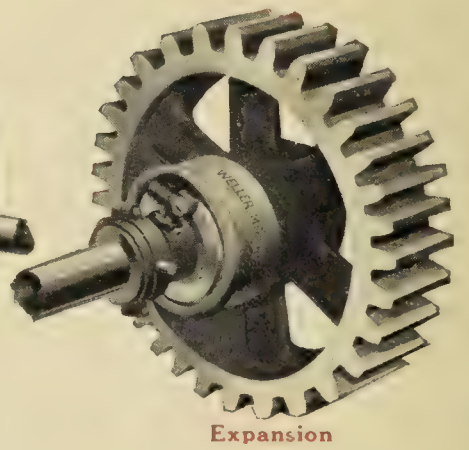
Standard



Double Grip



Steel Plate



Expansion

This is only part of our full line of

Elevating, Conveying and Transmission Machinery

described in General Catalogue J-20

Weller Mfg. Co. Chicago

New York	Baltimore	Akron	St. Louis	Dallas	San Francisco
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Ex.	711 Main St.	316 Rialto Bldg.

We Want Every Brickmaker To Read This Announcement Again

Trautwein DRYERS

We have been making a business of constructing Brick Plants and Dryers for years. To do this properly it requires the greatest kind of skill and experience. Having a thorough knowledge of this industry, we are in a position to be of great service to both active and contemplative brick manufacturers. This is demonstrated by the confidence imposed in us by some of the most successful companies in the business.

It might pay you to consult us with reference to your problems. *Let us send you our literature.*

Trautwein Dryer & Engineering Co.

417 South Dearborn St. **CHICAGO**

IN ADDITION

To our **Kiln Construction** work we have added a **Kiln Fixture** department and we are prepared to furnish Kiln Bands, Bars, Vents, Grates, Tools, etc.

Our prices are right. Our materials the best.

Our service is prompt.

Claude Smith Company

Kiln Builders

Plymouth Building, Chicago, Ill.

Service to Clayworkers

Alliance Brick Co..... 15
Alliance Clay Pro. Co..P- 8
Alsey Brick & Tile Co..P- 6
Alton Brick Co.....P-11
American Blower..... 750
American Clay & Cement Corp. P-11
American Enameled Brick & Tile Co.....P-15
American Process Co... 807
Ambursen Co..... 804
Atlas Car & Mfg. Co... 789

Baird Machine & Mfg. Co. 790
Ball Engine Co. (Erie Steam Shovels)..... 797
Barr Clay Co.....P-11
Belden Brick Co.....P-12
Big Four Clay Co.....P- 8
Bessemer Limestone Co.P- 8
Bradford Pressed Bk. Co.P-11
Bonner & Marshall.....P-11
Brighton Fire Brick Co..P- 6
Broderick & Bascom.... 783
Brown Instrument Co... 785
Buckeye Rolling Mill Co. 783

Canton Grate Co..... 794
Carlyle Paving Bk. Co..P- 9
Ceramic Sup. & Cons. Co. 792
Chambers Bros. Co.....749
Chase Fdry. & Mfg. Co. 808
Chicago Brick M. Co... 798
Chicago & Northwestern R. R..... 784
Chicago Retort & Fire Brick Co.....P- 4
Childs, O. J., Co..... 792
Cincinnati Frog & Switch Co. 807
Classified Ads.....831-832
Clearfield Machine Shops 782
Cleveland Alloys Co.... 788
Clinton Paving Bk. Co...P- 8
Copping Bros..... 782
Davenport Loco. Wks... 786
Danville Brick Co.....P- 9
Davis Fire Brick Co....P- 4
Deavitt, H. M..... 782
Deckman-Duty Brick Co.P- 8
Dewey Bros..... 782
Dover Fire Brick Co....P- 4
Dunn Wire-Cut Lug Bk. Co. .....P- 7

Eagle Iron Works..... 785
Eastern Machy. Co..... 833
Engelhard, Chas..... 786
Evans Clay Co.....P- 4

Gandy Belting Co..... 795
General Traffic Assoc... 782
Gerlock, H. W..... 782
Globe Brick Co.....P-15

Hamburg Vit. Bk. Co...P- 9
Harris Brick Co.....P- 8
Hendrick Mfg. Co..... 785
Hinde & Dauch Paper Co. 787
Hocking Valley Bk. Co..P- 9
Hocking Valley Pro. Co.P-12
Hook Patent Kiln Co... 796
Hydraulic-Press Brick Co.P-15

Ironclay Brick Co..... 12

Jackson & Church Co... 785

Do You Read Our Machinery and Equipment Department?

You should do so by all means, for it is one of the most important departments in this magazine.

You will find that we do not merely give a puff or a boost to some manufacturer's product, but each article is prepared with the idea of bringing to the attention of our readers some equipment or method that we feel will be of vital interest to clay workers.

It often happens that someone, somewhere can render you signal service by helping you to cut your cost of manufacture or to make a better product.

That's where our Machinery and Equipment department helps you, by telling you about the machine or service and enabling you to get in direct touch with the particular party that can be of assistance.

And it has proved far more satisfactory to group the editorials that deal with some reference to our advertisers' product or service, rather than to scatter them promiscuously through the book. Don't you think so?

Be sure you don't overlook this department—it is always bound to be of interest and importance to you.

The letter "P" preceding a number refers to the "Pink Section"

Keiler Brick Co.....P-15
Kimbell, S. S., Brick Co.P-15
Kissel Motor Car Co..... 799

Lehigh Car Wheel & Axle Works..... 783
Lehigh Portland Cement Co. 794
Link-Belt Co..... 825

Main Belting Co..... 747
Manufacturers Eq. Co... 801
Marion M. Fdry. & S. Co. 788
Marion-Osgood Co..... 808
Marion Steam Shovel Co. 829
Martin Brick M. Mfg. Co. 791
Martin Grate Co..... 800
Mathews Gravity Carrier Co. 825
Maurer & Son, Henry...P- 4
Mayer Brick Co., C. P...P- 6
McArthur Brick Co.....P-15
Mexico Bk. & F. Clay Co.P- 6
Metropolitan Pav. Bk. Co.P- 8
Mowrystown Brick & Tile Co..... 793
Murphysboro Pav. Bk. Co.P- 6
Murray Iron Wks. Co... 787

N. P. B. M. A.....P-10
National Dry Kiln Co... 803
National Roofing Tile Co.P-11
Nelsonville Brick Co....P- 8

Ohio Gal. & Mfg. Co... 807
Ohio Kiln Co..... 789

Pettigrew Foundry Co... 784
Pittsburgh Tile Mfg. Co.P-11
Price Electric Co..... 784
Purington Pav. Bk. Co..P- 9

Queens Run Fire Bk. Co.P- 4
Quinn, John.....P- 6

Read & Day..... 787
Roessler & Hasslacher.. 793

S. A. F. E..... 830
Sawyer Belting Co..... 827
Scandinavia Belting Co.. .....Front Cover
Schaffer Eng. & Eq. Co. 808
Schofield-Burkett Cons.. 828
Schultz & Son, A. L..... 791
Shawmut Paving Bk. Co.P- 9
Smith Co., Claude..... 745
Smith, W. W..... 828
Soisson Fire Bk. Co....P- 4
Southern Fire Bk. & Clay Co. .....P- 6
Specialty Wire Co..... 784
Standard Dry Kiln Co... 806
Stark Brick Co.....P-15
Sterling Brick Co.....P- 6
Stevenson & Co..... 802
Stupakoff Laboratories... 783
Sturtevant Co., B. F.... 782

Taylor Instrument Companies 787
Terre Haute Vit. Bk. Co.P-11
Thew Auto. Shovel Co.. 827

United Brick Co.....P- 8

Webb Wire Works..... 786
Weller Mfg. Co..... 744
Westinghouse El. & Mfg. 834

Zook, G. W..... 786

Untrue or exaggerated statements in advertising may usually be traced to inferiority in the product advertised

Permanent success in business can only be built around Truth and Merit.

LEVIATHAN BELTING

Is 35 years old, and each succeeding year finds it in more plants of reasoning men

"Hook 'er to a Leviathan!"

Main Belting Company

Manufacturers and Engineers

Philadelphia
Pittsburgh
New York
Seattle
Chicago
Birmingham

Main Belting Co. of Canada, Ltd.
Montreal Toronto

Send for Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)....$1.20

Brick Drying (English Edition).....$1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth).....$3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell).....$3.00

Clays: Their Occurrence, Properties and Uses (Ries)..$5.00

Clay Glazes and Enamels (Griffen).....$5.00

Clays, Tables of Analyses (Crossley).....$2.00

Clayworker's Handbook (Searle).....$2.00

Economies in Brickyard Construction and Operation (Lovejoy).....$1.00

Effect of Heat Upon Clays (Bleininger).....$2.00

Engines and Boilers (Watson).....$1.00

Engineering for Land Drainage (Elliott).....$2.00

Estimating and Contracting (Radford).....$2.00

Garage and Motor Boat Houses.....$2.00

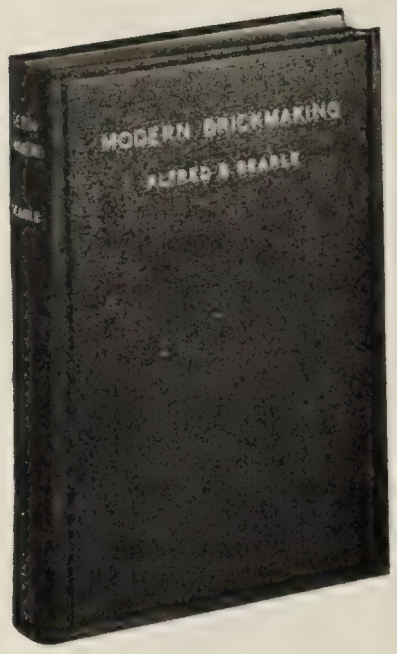
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work.....$1.50

Hollow Tile House (Squiers).....$2.50

How to Analyze Clay (Ashby).....$1.00

How to Read Plans (Radford).....50c



440 pp., 260 ills. - - $5.00 post paid

SEARLE is a recognized authority on clayworking, his writings being of a semi-technical, yet very practical nature. Every clayworking plant should have this book as a part of its library and everyone contemplating the starting of a clayworking plant, will find information in this book that will save thousands, if absorbed before the new plant is designed and the equipment contracted for.

The book deals with the nature and selection of clays, their special suitability for certain purposes, the color and characteristics of different bricks, the details of brick manufacture and the machinery employed in the process. Much valuable information is given on various refractory materials, on glazed brick and tile and on fireproofing.

The book can be obtained on receipt of price, through "Brick and Clay Record's" Book Department.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester).....75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe).$1.50

Modern Brickmaking (Searle).....$5.00

New Competition (Eddy).....$1.50

Notes on Pottery Clays (Fairie).....$1.50

Observations on Pottery (Beckwith).....60c

One Hundred Bungalows (BBA).....50c

Pottery (Geo. J. Cox).$1.25

Practical Brick and Tile Book (Dobson-Hammond)...$2.40

Practical Farm Drainage (Elliott).....$1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill).....$2.50

Producer Gas and Gas Producers (Wyer).....$4.00

Producer Gas Fired Furnaces (Nagel).....$2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard).....$4.00

Scumming and Efflorescence (Lovejoy).....50c

Seger's Collected Works (Condensed).....$3.50

Sewage Disposal Works: Their Design and Construction (Easdale).....$4.00

Sewage Disposal (Fuller).....$6.00

Sewers and Drains (Marston).....$1.00

Sewer Pipe and How to Make It (Vogt-Turner).....25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler).....$2.00

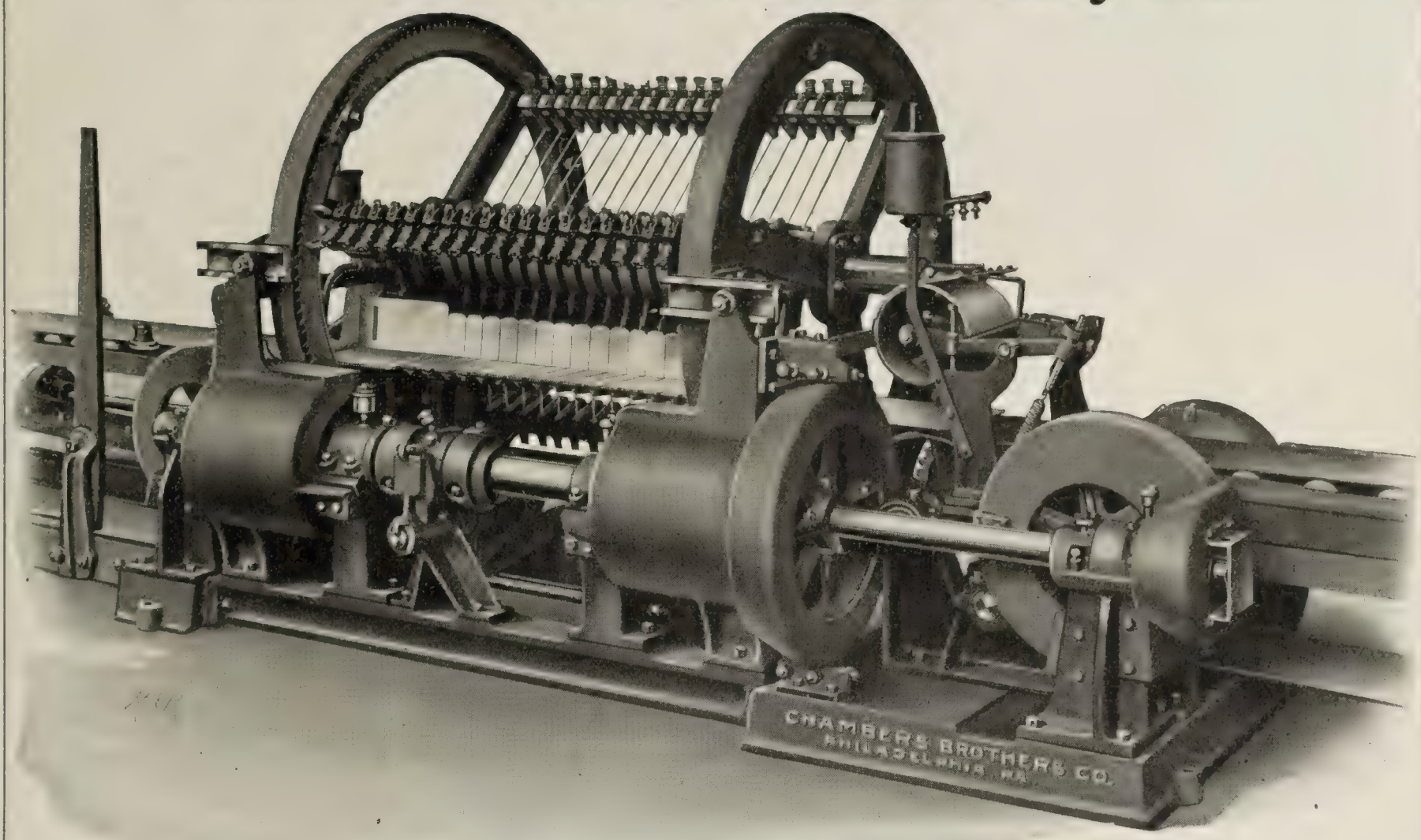
Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

New Multiple Brick Cutter

That Does Not Swell the Clay Bar



Automatic Side Cutter No. 10, Built by

Chambers Brothers Co., Philadelphia, Pa.

A frictional driven Cutter for Brick or Block that starts promptly and stops at completion of its stroke without noise or shock.

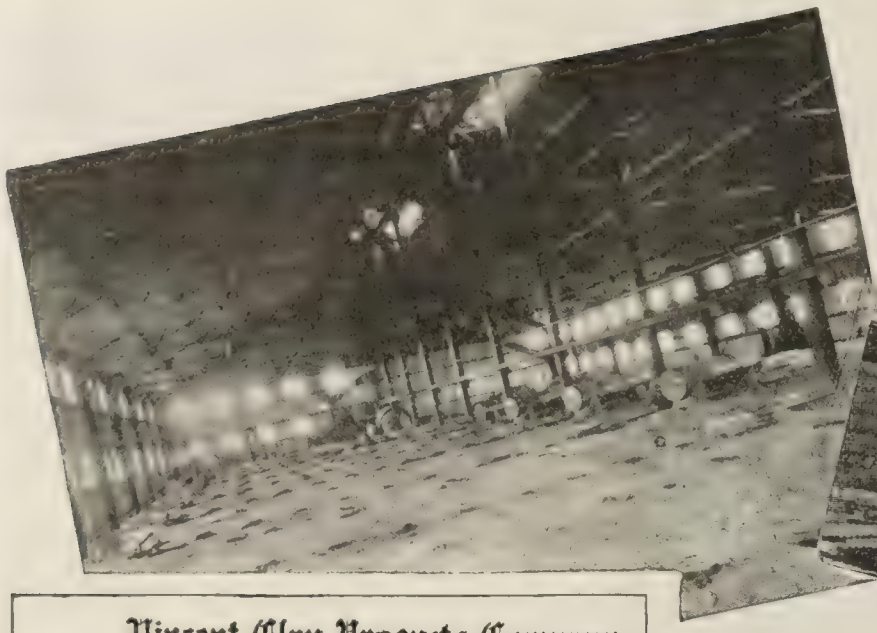
Entirely free from knocker clutches or similar throw out devices.

Driven through an enclosed cone friction of ample diameter and so arranged that the slight lateral movement employed to disengage the friction members upon completion of a cutting strike applies a brake to the entire periphery of the floating member. The result is highly satisfactory.

All revolving parts of the cutting mechanism, together with the platen, are suspended from a stationary steel shaft, the reel hub being upon roller bearings. There is no running machinery beneath the platen, no track or wheels for the support of a carriage, and no parts into which chips can be thrown by the cutting wires. Pressure by one finger will move the cutter endways in either direction.

Observe the enclosure of all gears, not only for their protection, but as safe-guarding against accidents.

Speed-regulating features meet the requirements of machine output and of tender clays. Adjustments to meet various conditions are made without stopping the machine, and are absolutely within control. The underside of clay bar is lubricated by a new method, using only so much lubricant as is required. No slop and no needless waste. A strong, durable, well-built Cutter.





Vincent Clay Products Company

MANUFACTURERS OF
VITRIFIED DRAIN TILE AND BUILDING BLOCKS
617 FIRST NATIONAL BANK BUILDING

FORT DODGE, IOWA,

Nov.
Seven,
1914.

Mr. S. R. Allen,
c/o American Blower Co.,
Chicago, Ill.

My dear Mr. Allen:-

We have finished the installation of the fourth Sirocco Fan and it is working the same as the balance of our fans that we installed under your direction to our entire satisfaction. The two fans that we put in first have been in constant operation for a year and a half in operating our continuous kiln and have not given us any trouble at all. The third fan operating our dryer has only been in operation about six months, but it is working out just as you said it would and I do not know of any change that we could make that would increase its efficiency.

We wish to thank you for the plans that you made for our installations and the care that they showed on your part by the way that they worked out.

Yours very truly,
VINCENT CLAY PRODUCTS COMPANY.
H. S. Vincent

HSV/AS.

A Sirocco TRADE MARK.

Waste Heat Drying System

Will do as much for you as it has done for **Vincent Clay Products Co.**, and for scores of other brick and clay plants all over the world. Let us put you in direct touch with some of them.

You Ought to Use a "Sirocco" TRADE MARK.

Because It Will Save Power—Time—Money

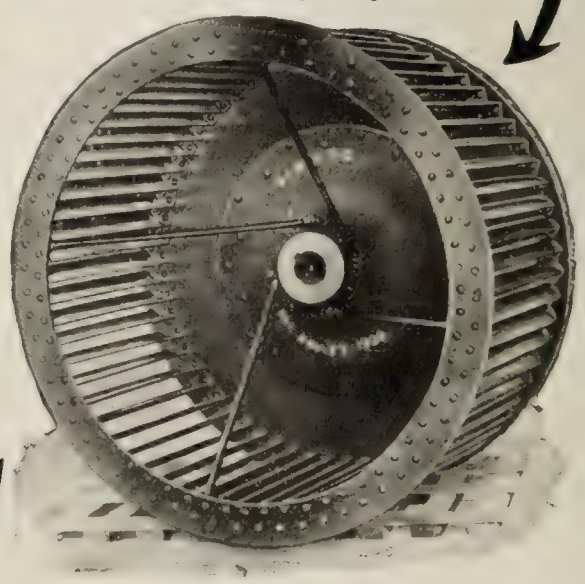
The construction of the "SIROCCO" Fan, with 64 steel plates (instead of 8 to 16 as others are made) means a saving of 30 to 45 per cent over the power required to operate the ordinary fan systems.

The "SIROCCO" dries far more rapidly than the old direct steam or furnace drying system—hence it saves you time.

The "SIROCCO" takes the waste heat from your kilns and utilizes it to perfectly dry your product—thus increasing the capacity of your present kiln equipment—and this means greater output with increased profits.

Ask for Bulletin No. 2102

We have an engineering force to study your problems. They do this without cost or obligation on your part. No matter where you are — we are at your service.



AMERICAN BLOWER COMPANY

DETROIT. MICHIGAN. U.S.A.

"It's All in the Fan"

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, April 20, 1915

Vol. XLVI No. 8

Table of Contents

"Build Now—and Save".....764
Burned Clay vs. Lumber.....765
Clay Products in Canada.....769
Electricity in Brickmaking.....756
Railroad Builds Hollow Tile Bunk-houses 771
Reaching the Farmer.....759
Where Brick and Tile Enhance Interiors 763

The Editor's Corner.....752

Freight Tariffs and Troubles.....778
Letter Box 774
Machinery and Equipment.....780
Pottery Notes 801
Questions and Answers.....773
Semi-Monthly Trade Review.....786
The Superintendent 776
Wake of the News.....789

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

AMERICANS—that is, those living north of the Rio Grande, are professional optimists. For that reason, we all believe that the day will come—and soon—when the demand for brick and other burned clay products that enter into building construction, will exceed the supply.

Optimism is a splendid quality. It blinds the eye of fear and strengthens the arm of action—that is, sometimes. Misapplied optimism waits for something to turn up—waits and does little else.

The maker of burned clay will share in the coming prosperity to some degree, without any very decisive action. He always has, and always will. Incidentally, he has always shared in the financial depressions—always has and always will.

He can, however, make his share in the prosperity greater and in the financial depressions less, if he will set about doing something to better his condition, and the way of setting about it has been shown him, many, many times.

The way lies in the direction of increasing the amount of brick and hollow tile used in residence construction. Here he has a field for his activities that will bring a sure and steady return.

Sure, because prosperity brings an ever increasing number of men with the "own-your-own-home" idea and depression an ever increasing a number of economists who are tired of paying rent.

Steady, because every home builder instills the "build-your-own-home" idea in the mind of his next door neighbor.

Publicity will add the "when-you-build, build-with-brick" thought to the "own-your-own-home" idea—the wish that fathers the thought of nearly every bridegroom, and as many brides.

The next thing is to make building with brick as easy as building with wood.

Start Masons Moving

The number of men who build their own homes is infinitely greater in the small town, and in the suburban districts, than in large cities. The higher cost of land in the larger centers of population makes apartment construction and apartment occupancy economical and profitable.

The building-codes and fire-limits of the larger cities give permanent building materials the call. Other restrictions, that do not exist in smaller communities, make it imperative to secure the services of an architect.

In the smaller places, however, the carpenter-contractor often serves as architect and artisan, a position of exceeding great strength, since it tempers theory with experience.

In this fact lies the greatest obstacle to the use of brick and hollow tile in suburban residence construction.

To overcome it, the maker of burned clay has a great work to accomplish. It is to encourage the migration of the mason-contractor.

And, until the mason-contractor is able to draw his own plans, to see that he is supplied with the proper material to successfully compete with the carpenter who is, at the same time, an "arch-it-tect."

Why Not Brick Plans?

Manufacturers of face building brick have long contended that they could not afford to be parties to any scheme which had in mind the distribution of "ready-made" plans and specifications.

They said that, in doing it, they would incur the enmity of the architect. Some pointed out that the fledglings in the architectural nests

The Editor's Corner

depended upon this class of work to give them their first start.

At the same time, the manufacturers of face building brick have bemoaned the fact that the "smaller" architect, being accustomed to frame construction in low-cost residence work, constantly turned good brick prospects into frame buildings, by pointing to the said-to-be prohibitive cost of brick construction.

The inference is that architects are friendly to frame despite the fact that magazines devoted to lumber interests continue to supply "canned plans." At the same time, it is thought that these same architects would be unfriendly to brick, if magazines devoted to brick interests did the same thing.

Truly the architect may be depended upon to work out his own salvation. He occupies an honorable place in the public mind, won by centuries of wonderful achievement. Why attribute to him a narrowness that goes beyond human comprehension?

Frame Plans Plenty

In every small community, when a prospective home-builder announces his readiness to invest his money in a small portion of the earth's surface, and to erect an abiding place upon it, he is met by two propositions.

The first is the carpenter-contractor, who offers to "give him a figure" based on plans that he—the carpenter-contractor—will furnish. These plans are drawn by a man who understands, and who is therefore friendly to frame construction.

The second is the mason-contractor, who suggests that the home-builder secure a set of plans from an architect, upon which he—the mason-contractor—will make a figure.

This brings in an element of chance. And the chance is, as a rule, against brick and hollow tile. If the amount of money to be spent upon the building is limited, the architect will advise frame.

Exit the mason-contractor, to appear later as a sub-contractor to the carpenter, who will add a profit to the price paid for the little masonry that is indispensable, even in a frame building.

Help The Mason Grow

The duty of the brick manufacturer is clear. It is to supply the mason-contractor with plans, until such time as he—the mason-contractor—is able to draw plans for himself, and so meet the carpenter-contractor on equal ground.

Following that—or perhaps, preceding it—is his duty of creating so great a demand for brick construction as will make it profitable for mason-contractors to locate in small towns and help to build them as they should be built—of burned clay.

No one need do much deep thinking to realize why there is a scarcity of skilled bricklayers everywhere ouside of the large cities.

Labor seeks a favorable market just as surely as water seeks its level and, in the cities where building-codes and fire-limits preclude the possibility of frame construction, the market for bricklayers is infinitely greater than in the smaller centers.

The carpenter, on the contrary, has found the small town a pleasant place wherein to earn his livelihood. The carpenter-contractor has no difficulty in securing labor. He finds customers that are, for the main part, neighbors and friends of many years' standing. He is able to build up a reputation for good work. Competition is fair and prices are good.

A mason-contractor, tired of the dictation of labor officials, who are all-powerful in large cities, can be brought to see that the small town is a place where he, too, can earn a living under better conditions. His "overhead" will be smaller, for his "yard" can be fenced in on cheap land. He has but to secure the work to build up an organization of good mechanics who will be very willing to exchange city conditions for those that bring a better return in healthy surroundings for their families.

"Getting the work" will entail the necessity of making plans. If the mason-contractor is too old to learn the rudiments of architecture, he probably has a son who will gladly exchange the journeyman's trowel for the draughtsman's pencil.

But until his education is complete, the brick manufacturer can gain the trade only by providing plans for the mason-contractor.

Indiana Comes Out of the Mud

The Hoosier State Prepares for Better Roads by Passing Bill Admitting Brick as Competitive Material on Highways

PAVING BRICK has come into its own, in Indiana. For many years, owing to a clause in the State law, it was practically impossible to secure a hearing for brick, in any of the public highways.

After an opposition that seemed insurmountable, the brick manufacturers of Indiana, aided by the National Paving Brick Manufacturers' Association, succeeded in securing the passage of an act which will permit brick to come in on a free footing with all other paving materials. The amendment was approved on March 11, 1915, and, under the enacting clause, became a law at once.

The full text of the amendment is given below, the italics being ours:

AN ACT to amend section one (1) of an act entitled, "An act to amend section sixty-two (62) of an act entitled, 'An act concerning highways, approved March 8, 1905, and declaring an emergency,'" approved March 15, 1913.

Section 1. Be it enacted by the General Assembly of the State of Indiana, That section one (1) of the above entitled act be amended to read as follows: Section 1. That section sixty-two (62) be amended to read as follows: Section 62. That boards of commissioners of the several counties of the State of Indiana are hereby authorized and empowered to lay out, establish and cause to be graded, drained and paved with stone, gravel, *brick* or combination thereof, or other road paving material any new highway or part of a highway in any township or townships in said state, and to cause to be straightened, graded, drained and improved in like manner any public highway or part of a highway already established in any such township or townships, in the manner and upon the conditions hereinafter prescribed: Provided, That where any such improvements are hereafter made of any highways or parts of highways extending into or through two or more townships, the board of commissioners shall fix, in the order finally establishing and ordering such improvements made, the ratio, proportion or part that each of such townships affected, and to be assessed, shall pay and be assessable with, of the costs of such improvements, by fixing and assessing against each such township that part of the costs according to the amount estimated for the improvement to be made in each such township, so that each township shall pay for the improvement therein made in such proportion as such board shall so fix in its order: Provided, however, That such improvements and all steps taken therein, shall be taken and such improvements made under and in pursuance to the several sections of the above entitled act, and the several amendments heretofore made thereto, and that when such improvements shall be asked to be made to run into or through two or more townships, the petition filed shall be signed by not less than twenty legal petitioners from each township sought to be affected: Provided, further, *That in all cases in said state where petitions have been filed for the improvement of any highway or part of highway or highways running into or through two* (2) *or more townships; and proceedings have been had as required for making such improvements in a township in said state, and an order has been made authorizing and establishing such improvements in two* (2) *or more townships under the provisions of the above entitled act, and in such order such board has fixed the proportion to be paid by each of such townships, in proportion to the amount of improvements to be made in the several townships as found and fixed by such boards, and contracts have been let for the making of such improvements, that any and all bonds issued and hereafter issued, to be sold for the purpose of providing money for the construction of any such improvements are hereby legalized,* and any and all bonds heretofore sold under such proceedings and the purchase price received and retained or used in making the improvements for which such bonds were sold, are hereby legalized, *and all proceedings or acts of any such boards or other officers under which such bonds were issued and sold are hereby fully legalized and declared valid;* and the several boards of commissioners of this state are hereby empowered to issue and sell bonds in such cases aforesaid, and the county treasurer is hereby authorized to sell any and all such bonds issued and to be issued as he is authorized to sell other bonds for improvements under the said act of 1905 and amendments thereto: Provided, That the rebuilding of free gravel, or macadam highways shall be done in the same manner as the building or improvements of highways: And provided, further, That all petitions for rebuilding of such roads begun under an act entitled, "An act to amend Section sixty-two (62) of an act entitled, 'An act concerning highways,' approved March 8, 1905, and declaring an emergency," approved March 15, 1913, are hereby validated and continued the same as if the same had been filed under the provisions of this act. Provided, that nothing in this act shall affect or apply to any pending litigation.

Section 2. Whereas, an emergency exists for the immediate taking effect of this act, and the same shall be in full force and effect from and after its passage.

Hollow Building Tile Men Meet

There was a very full attendance at the first quarterly meeting of the Hollow Building Tile Manufacturers' Association of America held in Cleveland on Tuesday, April 13. The amount of tonnage represented was more than 50 per cent of the manufactured product in the United States and Canada.

The forenoon session was given over to reports of the committees on tests, codes and business ethics, distinct progress being indicated by the report of the committee on tests, submitted by R. W. Allison, chairman, and by W. C. Denison, chairman of the committee on codes. The report of the committee on business ethics, through its chairman, F. W. Darling, was a very complete, comprehensive and satisfactory outline for putting the business on a higher plane, and was adopted unanimously with but one slight change. Further discussion was had on the matter of publicity and promotion, and the general good of the association.

In the afternoon the association was entertained by a talk from Will P. Blair, secretary of the National Paving Brick Manufacturers' Association, on general association work. Virgil G. Marani, C. E., an ex-building inspector of the city of Cleveland, gave a very extensive, enthusiastic and entertaining talk on the general use of hollow tile, with particular reference to the hollow

tile house, which will probably be printed and distributed by the association, as a "classic" in the business.

E. V. Johnson talked on the subject of the past, present and future of the hollow tile industry. Mr. Johnson has had experience as the pioneer manufacturer in this country, and gave a history of hollow tile that was replete in amusing and instructive anecdotes, inspiring in its history of the progress made and prophetic of greater things for the future.

Mr. James J. Hinde of Sandusky read a very interesting and inspiring article on "Conservation of Resources," his resume being that the greatest resource in the business of the country was good fellowship, and on this he said many things which the members of the association could profit by and take home with them.

The next quarterly meeting will be held in July; but the place and time has not yet been decided upon by the executive committee of the association.

New York State Clayworkers Organize

The latest arrival in the family of clay products manufacturers' associations is that which has been recently organized at Alfred, N. Y. It is known as the New York State Ceramic Products Manufacturers' Association, and has a membership of forty-eight of the most representative firms and individuals in the Empire state, interested in the manufacture of ceramic products and in ceramic education.

M. E. Gregory, of Corning, N. C., has been elected president, and E. T. Montgomery, of the New York State School of Clayworking and Ceramics (Alfred University), secretary.

It is the purpose of this association to further the business interests of its membership, as well as to discuss the technical problems of the industry, particularly as they pertain to New York state plants. An annual meeting will be held, probably in connection with the short course in ceramics that will be given at Alfred some time next winter.

This, by the way, is the first announcement of the short course mentioned, and it is thought that it will be welcomed by many who reside in New York.

Iowa Manufacturers Meet April 21

Secretary Platt, of the Iowa Clay Products Manufacturers' Association, has issued a call for a meeting to be held at the Kirkwood Hotel, Des Moines, Iowa, Wednesday, April 21.

In his letter, which has been addressed to the entire membership, as well as to workers in burned clay who have not, as yet, attended any of the Association meetings, he says:

"Something of interest to us all comes up every day. We haven't met for some time, and it would be agreeable to many members if we were to meet and consider some of the questions which are vital to our business as a whole. It is only necessary to state that our idea is to work out questions which will enable us to solve the difficulty of providing a steady demand for all grades of clay products and consult with each other regarding the methods of manufacture and, it may be, our costs of manufacture and sale.

"This Association does not seek to restrict its members in the independent conduct of their business. We have common interests and we need to work in common to preserve and strengthen them.

"It is to be hoped that all of those addressed will endeavor to attend a meeting which is hereby called for Wednesday, April 21 at 2 o'clock P. M., at the Kirkwood Hotel Club Room, Des Moines, Iowa.

Come with ideas of how we can best preserve what we have and add to our meagre portion of the great building operations yearly taking place on our farms and in our small cities and towns. Your suggestions are valuable and your presence is vital."

Texas Has New Lien Law

The material men's lien bill has been passed by the Texas state legislature and signed by the Governor, becoming a law immediately. The bill was introduced by Senator McNealus of Dallas, and has had the support of the makers and sellers of building material, who have long felt the need of such a law. The new law is considered to be fair to all concerned, calling for a high degree of mutuality in the contracts, which it provides shall be entered into in the application of the law. A bond is required of the contractor for the protection of the owner of the property under construction, making the contractor ultimately liable for material bills, but also making the owner of the work under construction liable to a certain extent.

Kaolin Producer Dies

George E. Haak, the well-known proprietor of the Sienna Paint, Kaolin and Sand Works, of Reading, Pa., died recently in his 74th year. He was the founder and first potentate of Rajah Temple, Nobles of the Mystic Shrine, past eminent commander of the Reading Commandry, K. T., past high priest of Excelsior Chapter, R. A. M., and past master of Reading Lodge No. 62, F. & A. M. John Jacob Haak, the first American ancestor of the deceased, was a farmer and large land owner in Alsace township, Berks County, Pa.

Regarding Filter Stones

Charles F. Geiger, of Urbana, Ill., writing in answer to the question relative to filter stones, published in "Brick and Clay Record" April 6, says: "Last September while visiting the Hay-Station plant of the Harbison-Walker Refractories Company, I was shown a filter stone that had passed through the experimental stage. Whether this product is now being manufactured at the point mentioned, I do not know.

Silo Building in Texas

During the past twelve months more than four million dollars worth of silos has been built in Texas. It is said that an average of fifteen silos per day has been maintained and, counting three hundred working days to the year, this would mean that 4,500 of these useful farm buildings have been put up. With more than 400,000 farmers in Texas, the manufacturers of the silo block have a fertile field in that state.

Another Concrete Failure

The Citizens Concrete Company, of Parkersburg, W. Va., having bought machinery to make concrete brick and started to put them on the market, has decided that they cannot make a "go" of this kind of material and has ceased its manufacture. The company desires to represent manufacturers of all kinds of clay products.

New West Virginia Project

The Municipal Shale Brick Company, organized at Martinsville, W. Va., has started the erection of the buildings which are the beginning of a new equipment that will cost close to $200,000. This company will manufacture building brick, vitrified fire-proofing blocks and paving blocks. Electric power will be used.

Electricity in Brickmaking

In Which an Electrical Expert Points the Way to Greater Economy in the Making of Common, Face and Fire Brick

By John A. Randolph

Of the Society for Electrical Development

AMONG THE INDUSTRIES which date back to ancient times, brick-making can be said to hold a place of decided prominence. Having its origin thousands of years ago, it has kept pace with the vast evolutions of industrial progress until it ranks today, more than ever before, as an indispensable adjunct of modern civilization.

Ever alert to the trend of mechanical installations, the brickmaker has realized the advantages of electric drive, and is now relegating the time-worn reciprocating engine to the junk pile while making use of the more efficient electric motor.

SHALE DIGGING

The first process in brickmaking is the getting out of the raw material. This, in the larger, modern plants is now done by a mechanically operated shovel. Electric motors have proved superior to steam for this work, and are, therefore, likely soon to displace the latter in many plants. A great advantage of the motor, as used for this purpose, lies in the fact that it can be started at a moment's notice without the necessity of the firing up required in the case of steam. Moreover, the disadvantage of hauling coal, and providing clean water, which necessarily accompanies the use of steam engines, is entirely eliminated by using motors. The more rapid acceleration and stopping of the motor, together with its greater speed, have been shown to accomplish a greater amount of work in a given time than the steam apparatus.



An Electrified Steam Shovel at the Springfield (Ill.) Paving Brick Company's Plant

ELECTRIC LOCOMOTIVES

There are various methods employed for hauling or conveying the shale to the storage piles, depending upon the contour of the ground and the distance of the clay pits from the plant proper. Two of the most common of these are by rail and by cable conveyor.

The most flexible and efficient method of rail haul is by electric locomotive. Recent improvements in this type of machine have developed it to a stage where it can be efficiently used for any class of short haul service incidental to industrial plants. Three general types are made; the trolley type, the storage battery type and the combined trolley and battery type.

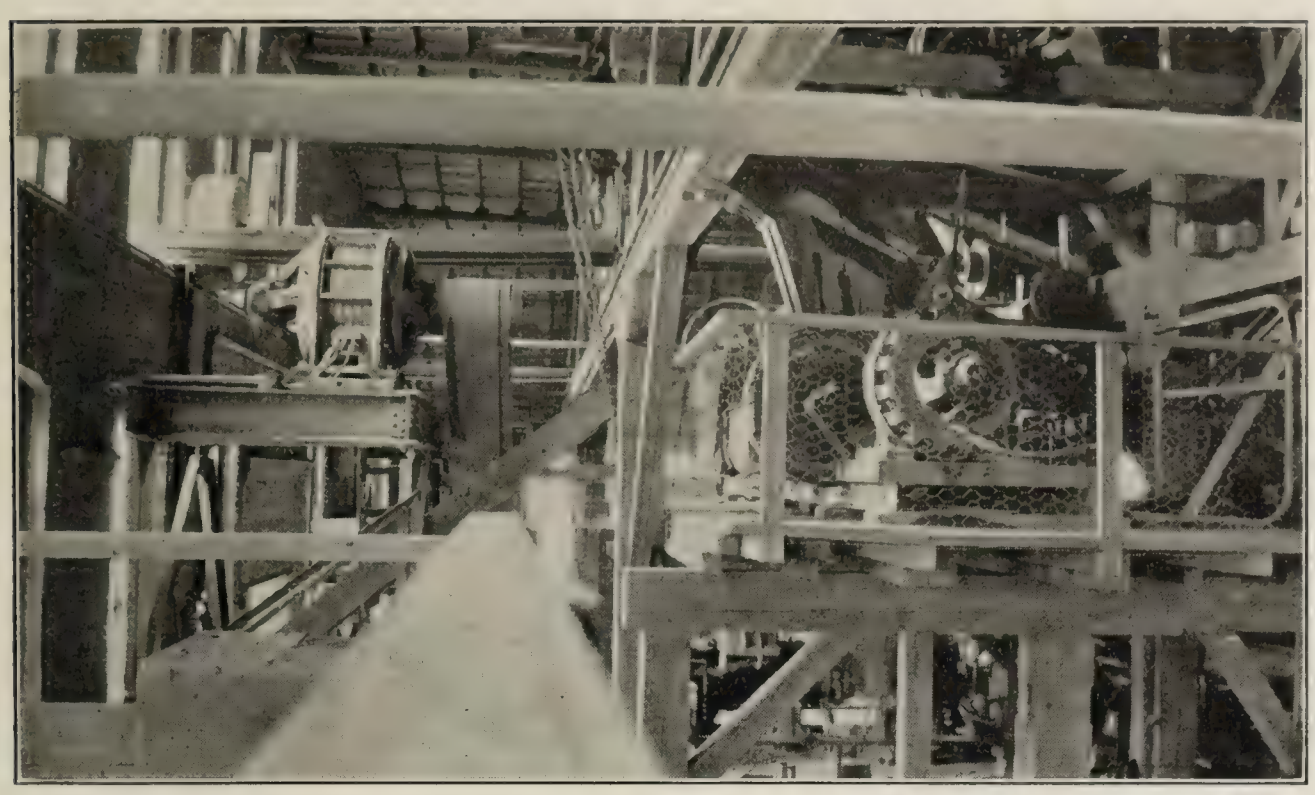
Where the traffic is heavy and continuous, steep grades must be negotiated, and the work is all of main line character; with other means provided for gathering, the trolley type is the most economical. However, if the work is of a lighter nature, the storage battery type is, perhaps, preferable. A marked advantage of this class lies in the fact that it requires no trolley wires, bonding of rails, nor any other exterior apparatus. Its power supply, after charging, is entirely inherent, thus rendering it independent of any accidents which may happen to the generating station. Furthermore, its lightness of weight and simplicity of accoutrement render it particularly adaptable to rail extensions for gathering purposes. The combined trolley and storage battery type embodies the advantages of both the other types, and is thus broader in its range of flexibility.

CONVEYORS

Where aerial tramways or bucket conveyors are employed the electric motor has also been found admirably adaptable for such work. One reason for this is that it is possible, by means of the motor, to drive the conveyor individually, thus rendering it independent in its drive of the other machinery. Breakdowns in line starting or other machinery of the plant thus do not affect the operations of the conveyor. Moreover, the motor lends itself to convenient and inexpensive installation at points on the conveyor which are remote from the plant. This feature is desirable for better control or for purposes of flexibility. Furthermore, the motor may be controlled from a distance, which effects an additional item of convenience and economy in its operation.

DRAINAGE PUMPS

An obstacle which is widely encountered in the clay pits is the accumulation of water. To work the pits to the best advantage, under such circumstances, it is necessary to have a pumping equipment on hand to remove the water. Also, owing to the changing character of the pits, as the diggings progress, it is necessary to move this apparatus from time to time. With steam apparatus it is not only necessary to often install a boiler at the pits, but pipe lines must also be run. These elements introduce factors of labor and expense which are almost entirely eliminated by the use of electric motors. Centrifugal pumps have now been improved so that they can be made to elevate water as high as 1,000 feet. The electric motor,



An Interior View of the Springfield (Ill.) Paving Brick Company's Plant. Note That the Motors Are Set on Platforms Above the Floor

because of its high speed, and even torque, is particularly well adapted to this work. When direct-connected to the shaft of the pump, a unit is formed which is compact and powerful. Its comparative lightness of weight makes it possible quickly to move the equipment about with little labor and inconvenience.

INSIDE APPLICATIONS

Inside the plant, electricity is now being generally employed for all the machinery. The roll crushers, which receive the seasoned clay as it comes from the storage pile, are driven by electric motors, as are also the various conveyors which carry the materials and products in their various stages through the plant.

Two general methods of drive are employed, the group and the individual. For the heavier machines requiring the larger amounts of power, such as pug mills, auger brick machines, and cutting tables, the individual drive is used. With the lighter machines, on the other hand, such as blowers, repress machines, and machine shop auxiliaries, the group drive is common.

TRANSMISSIONS

There are four methods in general use for the mechanical connection of electric motors to the machinery which they drive, namely, by belt, or link-belt, by gear, by direct connection and by clutch.

Belting is the method generally employed for group drive. A particular advantage lies in the fact that the motor may be placed at a distance from the machinery driven, and may, therefore, be suspended from the ceiling, where it will occupy absolutely none of the floor space.

The geared transmission is used principally for individual drive, and offers the advantage of compactness and rigidity. Because of the proximity of the motor to its machine, thus effected, this method offers especial convenience in operation, care and maintenance, and also the enmeshed gears prevent any slipping. This arrangement has the disadvantage, however, of transmitting the vibrations of the machine to motor. Especial care is, therefore, necessary, in installing the motor, that the foundation and tie bolts may be firm and not liable to disarrangement.

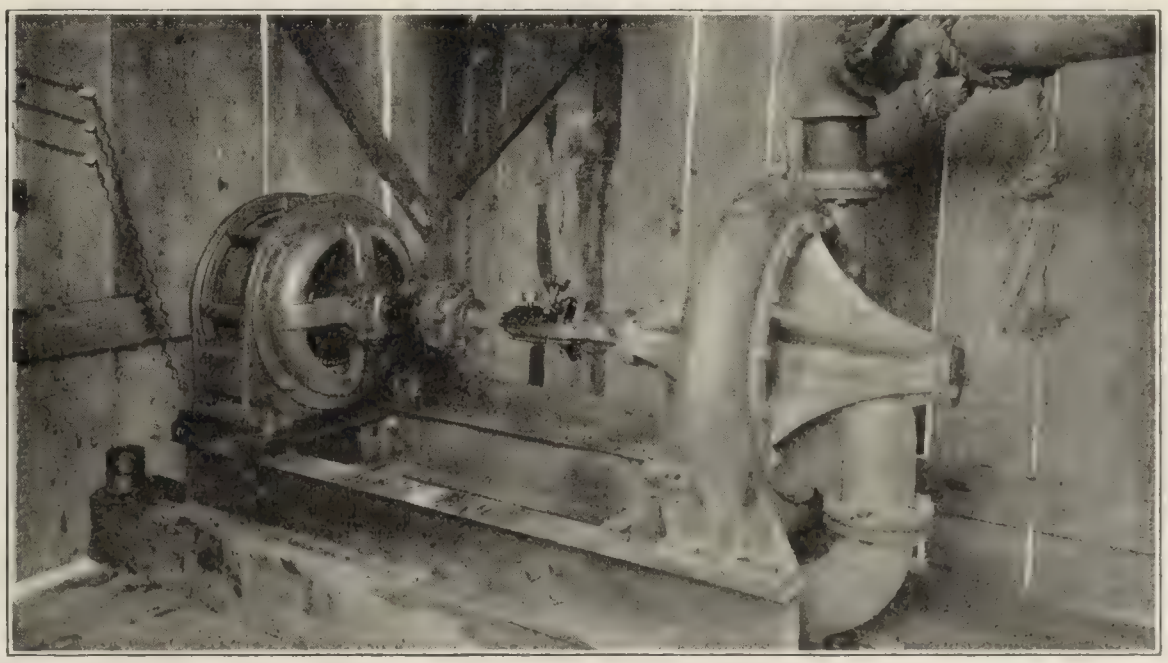
The direct connection is used chiefly in connection with high-speed machines, which work at a constant load factor, and which do not require a heavy starting torque, such as fans, blowers and centrifugal pumps.

The clutch method is used with both belts and gears. It is generally reliable in its operation, but it offers the disadvantage of extra working parts to maintain and to occupy space. It is not necessary with motors designed to start under load.

The form of drive best adapted to motor transmissions, other than direct, is the geared drive, with a flexible coupling. By this means the advantage of non-slipping is maintained without incurring the disadvantage of transmitting the vibrations of the machine to the motor.

CHOICE OF MOTOR

The type of motor to be used depends primarily upon whether an alternating-current or direct-current system is to supply the power. If a public service supply is to be used the kind will depend upon the nature of the available power supply. If a private plant is to be installed, or if either an alternating or a direct-current public service supply is available, it can be said that either the direct or alternating current types can be economically used. The



Induction Motor Direct Connected to a Centrifugal Pump, at the Jones Brick Company's Plant, at Macon, Ga.

direct-current motor offers the advantage of simplicity in connections and of requiring only two wires for its main leads. It can also be readily and easily adjusted to different speeds. Moreover, it is easily controlled where speed variation and reversal are desirable.

If alternating current is to be used the polyphase induction type of motor should be used. This is the type of

motor in most general use in brickmaking. It has the following advantages:

1. This type of motor is the simplest in construction of any type, and, therefore, has fewer parts to get out of order.
2. It has no commutator to give trouble through sparking or short circuits.
3. The squirrel-cage armature class of induction motor, which is the class most generally used, has but one set of windings. This is stationary and well protected, thereby reducing the likelihood of grounds or short circuits to a minimum.
4. The induction motor lends itself readily to purposes requiring frequent starting and stopping, variable speed, reversal and excessive starting through the use of a special winding on the movable element, a controller and a special secondary resistance.



A 40-H.P., 220-Volt, 3-Phase Motor, Driving a Brick Press at the Fairview Brick Company's Plant, at Denver, Colo.

The squirrel-cage armature motors are used for dry pans, sanders, conveyors, fans, bucket elevators and other machines whose work is continuous, whose speed is constant, and which require no reversal of direction.

The variable speed type of motor is used for pug mills, augers, tempering wheels, hoists, excavating shovels and machines where frequent starting and stopping, reversal, variation in speed, and an ability to meet excessive starting torque are necessary.

COSTS AND OPERATING DATA

The amount of power required and the costs of operation are dependent upon local conditions, upon the rated capacity of the plant and upon the load factor. From data compiled in a large number of cases, however, it can be said that, under average conditions, motors of a rating of from 5 H. P. to 40 H. P. will be ample for most purposes where individual drive is employed. However, where the group drive is employed in connection with the brick augers and heavier machines, motors with capacities as high as 75 H. P. are sometimes installed.

Of the total power required it can be said that an Illinois paving brick company, which changed over its entire power drive from steam to electricity, found that the average power consumed is 26.2 kilowatt hours per 1,000 brick. A Pennsylvania company using electricity for power throughout, and having a total motor capacity of 215 horsepower, consumes an average of 26.4 kilowatt hours per 1,000 brick.

Where current is purchased the cost will depend upon the prevailing rate per kilowatt hour for loads of that character. These rates will generally vary from two cents to five cents per kilowatt-hour. Three cents can be taken as an average. The local central electric generating station will gladly furnish complete information.

It has been clearly shown that electric service is easily adaptable to brick making, and is the most efficient method. Cost and all considered, electricity appears to be the solution of the many vexing problems of the brick industry.

New Brick Show Rooms in Chicago

Despite the fact that ruinously low prices prevail , so far as Chicago face-brick market is concerned, the dealers are spending considerable money extending their exhibits—notably the Hydraulic-Press Brick Company, which will occupy a suite of rooms on the third floor of the Chamber of Commerce Building, on the Washington Street side. The exhibit room will be unquestionably the largest in Chicago and from the work which has been done up to this time, it gives promise of being very attractive. Conventional bonds will be used throughout and the showing will be largely of brick manufactured at the various Hydraulic factories.

The Bonner and Marshall Brick Company will, the early part of May, remove its offices from the 12th floor in the Chamber of Commerce Building, to the 9th floor, occupying the corner suite. This gives the exhibit a splendid cross light and, according to the plans, this room will convey an out-of-doors impression. Roofing tile is one of the Bonner and Marshall Brick Company's important lines, and in order to give this product the proper display, some of the panel walls will be considerably lower than the ceiling of the room.

Good Brick Advertising

A new departure in local advertising has been made by the Decatur (Ill.) Brick Manufacturing Company which inaugurates a contest among the students of the Decatur High Schools, offering a first prize of $15 and a second prize of $10 for the best article submitted on the subject, "Why Build with Brick." The rules for the contest are given and limit the article to five hundred words, opening the contest April 4th and closing it April 21st.

Among other things which will come as a result of this advertisement, is the announced publication of the two winning stories, both of which are to be published in two of the principal newspapers, the editors of which are both appointed as judges, serving with a committee of four architects.

Buy it Now

You can buy it cheaper today than you can in a month, or two months from today, and your buying now will pay the man who gets your order a bigger profit than later, even though he charges a higher price at that time. He is reorganizing his forces now, installing his new machinery now, buying that he may be ready when the "big demand" comes. He will be braver if he has your support, now. He will "go in deeper" as a result of your order. You will help him to avoid the great mistake of selling the future cheaply.

Promoting a Plant At Mexia, Tex.

W. E. McKinney, secretary of the Commercial Club of Mexia, Tex., is promoting a company to build a plant which will manufacture hollow brick and tile.

Reaching the Farmer

The Tenth of a Series of Articles on the Field for Burned Clay Products Offered by the Prosperous Tiller of the Soil

By Edwin G. Zorn

CHAPTER XXIV

Analyzing the Market

ASSUMING that the man who makes burned clay ware for which there is a market in the farming districts, realizes the importance of advertising his product, and of having a good follow-up system to bring home the orders that are uncovered by that advertising, there is another point to which it would be well to call attention.

Had this been taken up in proper chronological order, it would have been among the first, if not the very first subject to be discussed, but owing to the fact that it involves an idea which is far in advance of the present-day methods of marketing burned clay ware, it has been held in the background, while other subjects, more native, and therefore more familiar to the average manufacturer, have been given precedence.

We refer to the analysis—the taking apart—of the agricultural field in every state, to find out, by counties and townships, if necessary, just where the greatest possibilities are, for the sale of brick, hollow-tile, silo block and drain tile.

There is an impression among many manufacturers that the only requisite for a successful advertising campaign—one that sells goods and brings back a profit over and above the cost of the campaign—is the necessary money to pay for the space used in the various publications. Some of these manufacturers are firmly convinced that it is only necessary to pay the publishers' bills for advertising, and that they will be immediately flooded with inquiries from prospective customers all over the country, demanding of the manufacturer that he tell them more about his product. "If we only had the money to spend, what wonders we could accomplish," is the long-winded but vain sigh of the man who thinks he can see the royal road to wealth via the advertising omnibus.

But it takes more than money to substantially increase the sale of a product through the use of printer's ink. *It takes brains,* and it has cost many a manufacturer thousands of dollars before he has appreciated that fact.

Brains in advertising means the application of knowledge and experience to the *writing* and *placing* of that advertising. The *writing,* as has been pointed out in previous articles, is the determining of just what to say in an advertisement and how to say it—that is, the "angle" from which to approach the prospective customer. The *placing* consists in choosing the proper mediums by which to convey the message.

"That's easy for us," you say. "Advertise in the farm papers. Nearly every farmer reads an agricultural journal, and if our ad. is big and attractive enough, he cannot help but see it."

Very well, what farm papers shall we use?

"Why '———— Farmer,' or 'Farmer's ————.' They cover my territory pretty well."

How do you know they cover your territory? *You don't know!* That is, your knowledge of the suitability of such and such a paper is not based on *actual facts* as to whether or not the subscribers of that paper are the best prospective customers that you can possibly get.

CHAPTER XXV

What an Analysis Means

In order to get a clear conception of just how this knowledge may be gained and the necessity for it, let us imagine that you have never given advertising a thought. But you have found that the territory in the immediate vicinity of your plant is too small or too well worked to give you a sufficient number of orders to pay a profit on your investment in machinery and equipment. You decide to send a salesman into the next county, or the county beyond that, or several counties, to call on the farmers and solicit their business for your product.

Do you send that man out blindly to grope about in search for orders? No. You say, "Go to Hicksville and Seedburg. The farmers in that locality are prosperous and happy. Their land is fertile and well-tilled. They own large herds of cattle, hogs and sheep. It will not take those farmers long to see the advantages of burned clay farm buildings, silos or better drainage. And when once they are convinced, they have the money to buy."

In this manner you point out to your salesman just where he can spend his time with a greater hope for success. You would not begin to think of starting your man in this new territory without some sort of a plan to follow.

Since advertising is the advance agent of the salesman and the pioneer in unworked fields, is it any more logical to employ haphazard methods in advertising than in sales management? With a multiplicity of mediums to reach the farmer, a knowledge of just where, geographically, are to be found the best prospects for burned clay, may be the means of saving considerable money to the manufacturer in the cost of advertising space. This applies particularly to the Middle West states where there are two and three different papers which claim to cover their particular state like no other paper. And then there are some journals which aim to cover several states. Nearly all of these papers have a different advertising rate, and it is no small problem to determine which paper is the most economical medium.

An analysis of the market for clay products on the farm would give the information necessary for an efficient and economical advertising campaign to reach the wished for buyer most effectively and sell the most goods.

It has already been pointed out in previous articles that the one great need for the manufacturer of clay products is a campaign of education to acquaint the farmer with the merits of burned clay for the construction of houses, barns, out-houses, silos and for the drainage of

fields. No one questions the fact that when once the farmer knows what clay products will do for him, he will immediately want to use them. There is only one obstacle between the desires and its realization. And that is the necessary money with which to buy.

In spite of all that has been said about the prosperity of the farmer at the present time, the fact remains that there are many spots where the purchasing power is low. It is true that as a whole the farmer has more money to spend today than he ever had in his history, and the prospects are excellent for a continuance of his prosperous condition. But there are places where the crops have been poor, or where the crop money has been used to pay off heavy incumbrances on the farm. There is still a large number of farmers who will not be thrifty, whose land is poor, or whose method of farming is antiquated, and, therefore, not conducive to best results or large profits.

It seems to be a proven fact that where there is a quantity of live stock on the farm, the owner is better able to invest in improvements about his place. In fact, the presence of cattle determines absolutely if a farmer is a prospect for a silo, whether it be for an addition to his silage capacity, a renewal of an unsatisfactory structure or an installation that will be his first experience in preserving corn for a winter feed.

The farms where the above mentioned conditions exist may often be grouped together geographically, that is, according to counties. When this is done the manufacturer or advertiser can see at a glance just where he should spend his money to get the best results by crystallizing possibilities into actual orders. Where a farmer has the buying power, there is some hope of getting his business, but with the poverty-stricken individual, the parting of him and whatever he has in the way of currency, is a much harder task, even though he may realize the advantage of possessing a burned clay hog house, silo or barn.

But the fact that a farmer is ready to buy, does not imply an order. Whether or not the manufacturer can ship the commodity and not make its price prohibitive, often determines the extent to which business can be done in a certain territory. No matter how thoroughly he in convinced that burned clay will help him and make his farm more profitable, the farmer is not going to pay a price for that material which, on the face of it, seems unreasonable. It will, therefore, be seen that freight rates and cartage play an important part in determining just where a manufacturer can sell his product and still get a price that will bring him a profit above the cost of manufacture and selling.

CHAPTER XXVI

The Bureau—the Key to Bigger Business

The making of an analysis of a market, however, cannot be accomplished without some expense. It takes time and careful thought to gather the data and information necessary for a clear understanding of the possibilities in a given field. Few manufacturers of burned clay would be justified in the expenditure incidental to the making of an analysis of their market.

Here may be added another item to the already long list of advantages of the promotion bureau for clay products on the farm, which would mean a substantial saving for each member, while greatly increasing his sales. An analysis of the market could be made by the bureau for whatever states seemed necessary. This would furnish accurate information as to the buying power of the farmers in the bureau's territory and the ability of its members to ship to these farmers. Then the advertising could be placed to advantage and the greatest business result.

Much has been said during the past five months in these columns regarding the necessity of a more extended publicity for burned clay products that find a place on the farm.

The advertising which is being done by the makers of cement, wood and metal, poor substitutes for burned clay, has been flaunted before your eyes, with the hope that a serious consideration of the inroads these materials are making into your sales, would spur you on to action.

Methods of distribution have been discussed. The part of the dealer in a campaign, such as has been mentioned, has been outlined, and how the manufacturer who sells direct to his customers could improve his organization, was carefully gone over.

It has been pointed out that the bureau idea is the most economical and effective method for creating a bigger demand for clay products on the farm. What manufacturers in other lines of endeavor have accomplished with a promotion bureau, was brought out to substantiate the claim that this idea had already proven its worth.

The bureau being established, it was then shown how the advertising for the various forms of burned clay could be done. Specimen ads., written by an experienced copy writer, were given to demonstrate the possibilities for effective and result-producing copy that would come with a bureau manned by a corps of trained workers.

The necessity for a well-planned follow-up system with good literature has been urged, and it has been pointed out, that unless the dealer works with the manufacturer in closing up with the prospects secured through advertising, much of the good of the campaign would be lost.

And last, but far from being the least of the many advantages emanating from the promotion bureau, would be an intelligent analysis of the market for burned clay on the farm—a knowledge that would enable the bureau to spend its money wisely—not only in the buying of advertising space—but also in any other publicity work it might undertake.

What more could be desired on the part of the manufacturer of clay products in the way of assistance to break the bonds of small demand and get up on the plateau where the grazing is better and the "fat" years more plentiful?

There have been indications very recently that the man who works in clay is oblivious to the opportunities which have, and still are, presenting themselves for a greater publicity for his product. It would take a Diogenes to find an honest reason why certain publicity schemes should not be supported by the brickmaker. The only ghost of an excuse for a lack of financial aid that can be conjured up, is that, possibly, because of a low ebb in building construction, the brickmaker does not feel that he can contribute *even to his own betterment.*

But for the manufacturer who finds a market for his product on the farm, this "ghost" offers not the slightest protection. His customers are for the most part prosperous. They have money and are willing to spend it. Here and there, where a progressive clayworker has had the initiative to show the farmer just where he will profit by the use of burned clay, the farmer is spending some of his surplus for that material.

In the face of these facts, there does not seem to be

any reason why a promotion bureau should not be formed. The agricultural communities of this nation offer a vast field for the sale of clay products—a field that is hardly being touched.

There is a constantly growing demand on the part of farmers for more knowledge as to the benefits of drainage. If the tiling of their fields is going to help them produce bigger and better crops, they want to know about it.

The silo and the advantages of silage as a food for cattle have been developed to a high state of perfection. The number of silos being erected in these United States is increasing almost as rapidly as mosquitoes in a swamp.

The idea of permanence in farm buildings is in its infancy, and is waiting to be developed by enterprising manufacturers.

Whatever has been done in the way of advancing these improvements on the farm, has been done wholly outside of the realm of burned clay. The clay products manufacturer has had little or no part in this work in the past. *How long will he continue to play the disinterested spectator and let some one else do the educational work, with the thought that somehow or other he will get the benefit?* The manufacturer or interests that *till* these fertile fields *now* will reap the bounteous harvest, *and not the man who has been looking on.*

It was reported that a certain prominent individual called the recent business depression "psychological." There is nothing of this kind connected with the sale of permanent building and tiling material.

It is more a question of invasion. The farmer has money—money he is anxious to spend if he can see a benefit coming to him from its spending. The clay products manufacturer has his output to sell, and wants to sell it to the man who can afford to pay for it—the man who, having bought it, will offer a good example to his neighbor. Advertising will bring the two together. But the advertising should be handled wisely—which means the taking of the same way that has been followed by manufacturers in other lines—manufacturers who have been wonderfully successful in their promotion work—wonderfully successful in "Reaching the Farmer."

Soft Paste Porcelain

Pate Tendre or soft paste porcelain—this is the name given to the artificial porcelain produced in France towards the end of the seventeenth century, until it was abandoned at Sevres in 1804.

The origin of the production of this beautiful ware was the importation of Chinese porcelain, which by its novel character, invited the attention of both manufacturers and connoisseurs. All kinds of legends were current as to its composition. An Italian writer in the sixteenth century stated that it was "a mass composed of plaster, eggs, shells of marine locusts and such like." It was also stated that if poison were put into a porcelain cup it would burst asunder. The allusion to shells probably refers to the shell-like appearance of porcelain which, in fact, owes its name to the shell, *Cypraea Porcellana* which was largely used as an object of art. The first imitators of the true porcelain were the manufacturers of faience, who sought, by increasing the proportion of flux in the body mixture they were using, to produce the characteristic translucency which distinguishes porcelain from earthenware. In this they were partially successful, but the idea was not developed upon a commercial scale. There is positive evidence that in 1798 soft porcelain was being made on a considerable scale at St. Cloud in France, and this was followed successively at Lille, Chantilly and Vincennes, which afterwards became incorporated with Sevres as the Royal Manufactory. Soft porcelain was a complicated artificial mixture which was, for the most part, sintered into a frit to be afterwards ground and made as plastic as possible by the addition of "marl" and the use of mucilaginous binders. The French authorities, Gasnault and Garnier, give the following account of the process:

"The paste was composed of sand of Fontainebleau, saltpetre, sea-salt, soda, alum and gypsum; all of these elements were mixed together, and placed in an oven in a layer of considerable thickness, where, after being baked for at least fifty hours, they formed a perfectly white frit or vitrified paste. The frit, having previously been crushed, was mixed with Argenteuil marl in the proportion of nine pounds of frit to three pounds of marl, and a paste was thus obtained which was kneaded by machine for about three weeks; it was then put to dry in troughs, pressed by cylinders, sifted, and wetted so as to form lumps which were made plastic with green soap and boiling water; these various operations required considerable time and care.

"The preparation of the glaze required quite as much care. It consisted of sand of Fontainebleau, litharge, salts of soda, Boungival silex or gun-flint, and potash; all these were crushed and mixed together, and were then melted in crucibles, in which they were transformed into a kind of crystal, which, being pulverized and wetter, formed an enamel.

"The pieces were first baked 'in biscuit' and then enameled, the glaze being poured over the pieces and not the pieces dipped into the glaze; and, in order to fix the enamel more firmly to the biscuit, it was mixed with vinegar at the moment it was applied."

The marl referred to was probably a soft clay, containing lime. The same writers gave the following excellent description of the difference in the appearance of soft and hard porcelain:

"The superiority of soft porcelain is chiefly due to the glaze it imparts to the colors, which seem to blend completely and, as it were, to incorporate with the enamel with which they are fused. This is one of the distinctive features of this porcelain, and may, when other characteristics are wanting, assist in distinguishing it. When soft porcelain is held slantingly, so that the light falls partly on a painted and partly on a white surface, there is no perceptible difference in the glaze or enamel of these two surfaces, which are equally pure. If, on the contrary, hard porcelain is examined under the same conditions, a certain difference is discernible; and however carefully the colors may have been glazed, they appear less brilliant than the enamel, with which they do not incorporate."—C. F. Binns, in "Pottery and Glass."

Denny-Renton Issues a New Booklet

The Denny-Renton Clay and Coal Company of Seattle, Wash., is now distributing to its trade and prospective customers, copies of a booklet entitled "On the Road." Aside from being a missionary tract for paving brick, the book touches on the situation in the Pacific Northwest, where the product of the Denny-Renton Clay and Coal Company has been extensively used.

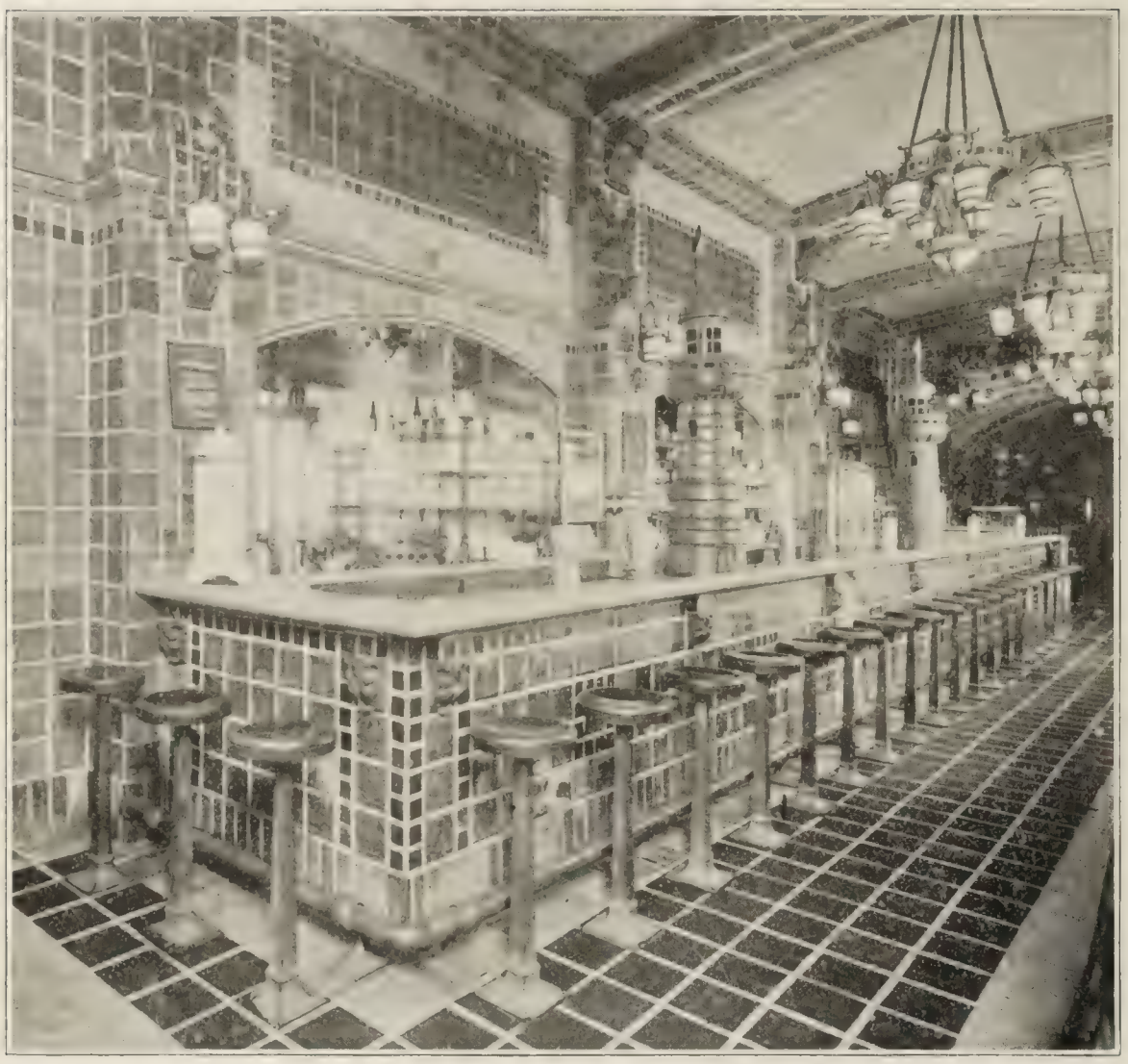


Figure 1. The Interior of This Confectionery and Refreshment Shop Is Almost Entirely Finished in Tile and Brick

Where and Enhance

A New Field for Burned Clay Found in Classy Shops

By Charles

THE USE OF BRICK AND TILE for shop interiors has become so popular during the past two or three years in Los Angeles, California, as to seem to have developed into a sort of fad. In the effort to outdo one another in making their shops uniquely attractive the shopkeepers of that city have taxed the ability of architects and decorators to the utmost, and as a result many widely different examples of real decorative art have been created. And realizing its wide range of possibilities in the matter of design and color scheme, burned clay has become by far the most popular of all building materials for this purpose. It is used for artistically finishing the interiors of business places, both large and small—of hotel offices, club rooms, restaurants, drug stores, soda fountains, meat markets, fruit stores, and, in fact, shops of every description.

For confectionery and refreshment shops brick and tile have become particularly popular. It was formerly customary to build the soda fountain, especially in the shops of the better class, almost exclusively of marble, but now, in Los Angeles, brick has superseded marble almost exclusively. The use of brick for this purpose enables the creation of many unique and striking effects which cannot be so satisfactorily produced in any other way, and at the same time gives to the shops an individuality which is especially delightful.

In order to show some of the possibilities in this direction, we are here reproducing photographs of a few of these strikingly decorated Los Angeles shops. The first illustration (Fig. 1) shows a confectionery and refreshment place, with soda fountain, with its interior finished almost exclusively in brick and tile. The flooring and walls, including the walls of the counter, are tile, and the slightly arched ceiling, except the cross-beam effects—which are likewise of tile—is of buff colored brick, laid in herringbone bond. The tile squares are of various sizes, and range in color from a very light shade of cream to a dark brown. Artistic border and panel effects are created from the different colors, and the wide mortar joints, which are of very light cream tint, cause the dark-shaded tile squares to stand out in more or less bold relief. The tile is of soft, dull-toned surface, and because of the texture and the blending of colors the interior of the shop is given an unusually attractive and cheerful appearance. The illustration deserves to be very closely studied.

On the opposite page Figure 2 shows a view of another shop of this kind. In this case the flooring is of red tile, laid in red mortar, while the fountain sections are constructed largely of red brick. For the brickwork the mortar used is almost pure white, and into the brick counter walls are set large squares of marble, while the counter-



Figure 3. The Booths in This Dining Hall Are Partitioned Off With Brick and Covered With Roofing Tile

Brick Tile Interiors

Craftsmanship Finds Grateful Material In Rough Faced Brick

Alma Byers



Figure 2. Another of Los Angeles' Fashionable Shops. Here Tile and Brick Are Used to Splendid Advantage

shelf itself is also marble. Over each fountain section, as well as along the rear end of the room, projects a sort of roof effect, and the covering of this projection consists of red roofing tile—a very unique and attractive arrangement. The woodwork, although consisting of ordinary pine, is treated to somewhat resemble Circassian walnut, and the open wall spaces are decorated with large paintings. The red of the brickwork and the roofing tile dominates the color scheme, and the unusual design of the interior creates a particularly distinctive appearing shop.

The other two illustrations (Figs. 3 and 4) show the interior of a combined drug store and refreshment parlor. The first shows the drug store section, with its soda fountain, and the second portrays the refreshment parlor in the rear. As will be observed, the fountain counter is constructed of ordinary pressed brick, which are of bluish red color, and are laid in dark blue mortar, while the counter shelf is of marble. The wall back of the counter, into which are constructed the cabinets and shelves, is also largely of brick, and here again a sort of roof effect is created with red roofing tile. In the refreshment parlor in the rear, brickwork plays an even more conspicuous part, and the general effect here is especially striking. On either side of the room is a row of private booths, and the partition walls are of brick exclusively. On one side these dividing walls are but about four feet in height, at the outer end of which is a sort of pillar pedestal, to support a small electric lamp. On the other side the booths are entirely enclosed, except on one side, with the partitions constructed likewise of brick, while over them extends a tile roof, to continue the effect which prevails in the front part of the store. Even the low wall forming the cashier's office is of brick construction. Considered as a whole, the interior arrangement of this place is very unique and artistic, and has elicited a great deal of local admiration.



Figure 4. Here the Counter Front Is of Blue Brick, Laid in Dark Mortar

For the shopkeeper who wants to create something out of the ordinary, "something different," no other building material will come quite so near meeting his desires in this respect as brick and tile. Since they can be obtained in so many different colors and finishes, these materials can be utilized to produce any number of delightful effects for shop interiors, and such shops will invariably possess an individuality that will make them much admired. An interior finished in brick or tile possesses a warmth of color that cannot be so satisfactorily produced in any other way whereas, a marble-finished interior is invariably cold and uninviting. Another point in favor of brick and tile for this purpose is that they are less expensive than marble, and at the same time these materials are just as durable, even if not more so. Burned clay men, in short, should remember that shop interiors may be made to constitute an important field for their products, a field that so far has been but little worked.

Brick, particularly, offers a material for interior decoration, the possibilities of which are just beginning to be understood. The size of the unit, its wide range in color and the variations possible with the mortar joint, make this material one of great beauty and extreme practicability.

Build Now—and Save

Half a Hundred Daily Papers are Giving Columns of Space to the Economies of Immediate Building

THE "BUILD-NOW-AND-SAVE" movement is the legitimate follower of the "Buy-It-Now" activity that has done so much for the merchants of a hundred different cities. It had its start in the South, where the newspapers have used it, to call the attention of prospective builders to the advantages of the present day, in low-priced material and effective labor. In a recent issue of the Chattanooga (Tenn.) "News," the following appears, in bold type, and in a page bordered with advertisements of progressive contractors and supply houses:

"Believing, and having the best authority to support the belief, that all branches of building material will naturally advance at least 10 per cent in the next six months, and 25 per cent within a year, it was the idea and hope of the 'News' that if these facts were put before the people, that anyone contemplating the erection of a home or repairing to any extent would see the wisdom of taking advantage of the times to do this work.

"The recognized and acknowledged fact by those in position to know that there will be an advance of 25 per cent on all prices within the next year, is all the argument necessary to prospective builders. It was also pointed out that labor can be obtained probably cheaper today than at any time; also that contractors will figure on smaller margins, in order to keep together their organizations, thus the saving to builders should be so big they could not afford to put off their building operations.

"Many daily newspapers of the South have each set aside a page to be used to further this movement, and from week to week new work and information will be given on these pages. Watch this paper and join in the spirit of the work. It means much for the city, and needs the aid of everyone. Talk it to your friends—maybe you can call attention to some one who has overlooked the move and who might want to take advantage of same. Advertisers, preach it in your ads, especially in those lines most affected. It is time for co-operation and assistance, and can but reflect much to the good and prosperity of our city, besides giving to the man wishing to build or repair an opportunity to do so at a big saving to himself, and also give employment at this time to all lines of labor.

"In connection with the building of public buildings at the present time and the resultant saving of public funds, the 'Manufacturers' Record' of recent date carries the following:

"'Throughout the South there is a growing tendency to do all possible work now. Wisely handled, this is worthy of all commendation. It is in line with the persistent advocacy by the "Manufacturers' Record' that communities should 'Do Public Work Now,' and that people who can afford to build should 'Build Now.' In this way it is possible to overcome much of the burden which the country is carrying in the hundreds of thousands of unemployed people. But even the importance of this should not cause any community to rush into ill-advised public work merely to create employment. Every undertaking should be justified from the economic point of view of the final welfare of the community, as well as from that of work which creates more employment.

"'It is well in this connection that the whole country should give serious heed to every phase of this situation.

"'Every idle man is a drain on the life of the community. In one way or another every property-owner and every man who is employed are contributing to the burden of carrying the idle men. The wealth of the community is increased by employment and decreased by idleness. Looked at, therefore, from the economic point of view, without regard even to that higher demand of humanity to lessen non-employment as much as possible, it is incumbent upon every community to give close study to the situation and see what can be done by individuals or by committees to create employment for men who are hungry for work.

"'Throughout the South there is a vast amount of public work that needs to be done; roads need to be built, streets to be cut through and paved; villages, towns and cities need to be cleaned up and made to look more attractive than many of them do. Sewerage systems are needed at many points, and extensions of such systems at other places, while many other things should be done which would add to the healthfulness and the general welfare of the community. There are few towns in the South that do not need such a general overhauling and cleaning up that to do the work properly would give employment for a while at least to many of the idle men in the community. A great change for the better would come over the whole South if this time of business depression should be made a time of general improvement, or road making, of street paving, or sidewalk laying and of cleaning up unsightly and insanitary back lots and back yards, thus stimulating the community to higher aspirations of their town. Houses need to be painted, yard and garden fences put in repair, great piles of unsightly rubbish and tin cans and waste paper, an eyesore to every visitor as well as to the local people, should be given prompt attention. While the South is planning for the issuing of securities for building roads and waterworks and sewerage systems, and for the construction of public buildings, let it at the same time enter upon a general cleaning up and repairing campaign. Let there be a rivalry in every community against its neighboring communities in doing work of this kind. There never was a better time for such work, and in the doing of it a very great proportion of the men now idle could be given employment for at least a part of the time.

"'Every public official in the South, every taxpayer and every investor will find in the many letters from houses which make a specialty of handling municipal securities an illuminating discussion as to how securities should be issued, as to the market for them, and of other questions connected with these matters which so vitally concern the welfare of the whole South.'"

Makers of burned clay products that enter into building construction will serve their own interests by asking the editors of their local papers to give publicity to the "Build Now—and Save" movement. It means the earlier coming of "better times."

Burned Clay vs. Lumber

A Forecast of the Evidence and Defense in a Case that will Shortly Come Before the Court of Public Opinion

IN CONCLUDING this series of articles, the authors have given the manufacturers of burned clay a new thought. It is that an advertising campaign can be made more effective, if conducted solely on the proposition that wood burns. They differ with the advertisers who lay emphasis on the comparative cheapness of brick construction and warn against a too liberal use of other popular brick-selling arguments.

By Gardner Read and E. Winfield Day

AFTER ALL that has been written, we believe it is fair to assume that brick publicity will be directed against frame building, and not waste any of its hard-to-collect ammunition against materials that have the same talking points as brick. This with, perhaps, one exception.

Every building material that is fire-resistant can employ the "safe from fire" slogan, and, in a moderate way, the arguments relative to lasting qualities that are used by brick. The one thing where brick bests its fellow fire-resistant materials is in point of beauty.

Brick can say "Build with Brick for Beauty and Economy." Cement cannot use more than half of the slogan—truthfully.

So, to resume—the direct line of attack will be against frame construction. Following this line, brick will take cognizance of the fact that there is only one important division in the building material world, and that is the division between the things that burn and the things that don't.

Once that is clearly fixed in the public mind, the prospective builder will have a new viewpoint. He will consider fire-resistant construction in the same light as sanitary plumbing, gas-piping and electric light wiring—things that cost money—*but which he cannot afford to do without.*

The impression is fixed—and thoroughly fixed—in the public mind so far as schools and hotels are concerned. Few, if any, buildings destined to hold a large number of people at one time, have been built of wood during the past five years. And in the old buildings that are still being used for the purpose of fairs, expositions, poultry-shows and the like, the thought "suppose there should be a fire" is fast followed by an ordinance forbidding its use for the purpose for which it was erected.

But, up to now, the man who gasps with horror at a fire in some distant city, where human life was sacrificed to frame construction, does not apply any part of the lesson to his own home—his own family.

That is something that brick advertising will have to do for him, with the assurance that *once the typical American home-builder feels that a frame house is too unsafe a shelter for those who are nearest to his heart*—brick residence construction will grow by leaps and bounds.

FIREPROOF SCHOOLHOUSES

One reason why men build fireproof schools is that, every time there is a schoolhouse fire, in which any number of children's lives are lost, the newspapers take up the story and, with skillful fingers, play upon the heart-strings of every school-child's father or mother, even though they be thousands of miles away.

Every time a hotel burns, and the lists of dead and missing are published, the "man on the road" who reads the big type and sees the pictures, makes up his mind to patronize nothing but fireproof hotels. And his wife urges him to remember this resolution, every time he starts on another trip.

But—when a residence burns to the ground, and with it, perhaps, a wife or mother—a son or daughter—it isn't "news." The big papers are not interested unless, perchance, the father of the family has made a great name for himself. Then it is "news" because *his* family was found, burned to death, *his* home a mockery of what it was, in the pitiful rubbish that survives a fire.

The brick men can make every residence fire a "news" feature. *A list of the fires that destroyed homes,* printed every day, as an advertisement, in the great dailies of a hundred cities, would stop fifty per cent of the frame residence construction within a year!

Without spending one cent on space to tell how *cheap* brick is (and this, to the writers' minds, is the greatest mistake brick men make) without spending a cent to tell how beautiful brick is—how much warmer in winter and cooler in summer—and all of those other difficult-to-prove things, it could attain its end by simply publishing, each day, the fires that were reported up to a certain day previous, and giving details, where details were interesting.

Without any inducement, in the way of "free plans" or "free figures" or "comparative costs" or what-not, it could, by simply publishing the truth about frame construction—*that it burns*—wipe frame residence construction off of the map.

POLITICS AND RELIGION

There are only two things that a man sticks to, despite logic. They are his politics (no matter what those politics are) and his religion (no matter what that religion may be). You cannot argue him out of his position on those two points. But on every other point he can be convinced by good logic, forcibly applied. And there is a lot of logic in the statement that *frame houses burn.* Every building ordinance backs it up. Every modern building practice is in line with it. Wooden buildings are forbidden because they endanger the lives of those who occupy them, and the lives of those who live near them. So you are very logical when you make the statement that a man cannot afford to house his family in walls of wood, since he exposes them to an unnecessary fire-hazard.

So you have the logic—now to give it forcefulness.

The data regarding residence fires is comparatively easy to obtain, when these fires occur in cities and towns where there is an organized fire department. The value of the data will depend upon the regularity with which it is obtained, and the promptness with which it is tabulated.

Two things are necessary, then, to the success of any publicity movement which has fire statistics for its basis. One is an intelligent system of collection, the other an equally intelligent system of distribution.

For the first, no better means can be found than in the

employment of someone directly connected with fire department work. A list of the deputy state-fire-marshals can be obtained, and one of these appointed in every center of population. This, in some cities, will mean two or three men. Sometimes it will mean one man for two or three towns.

Just what amount will be necessary, in the way of fees or salaries to these men is a question. But the advantage that they possess for the gathering of the information that would form the background of a campaign of "burned clay vs. lumber," is beyond doubt. Many of these deputy state-fire-marshals have fire alarms in the home that ring at the same time that the alarm is given in the fire engine house.

HE WILL BE "ON THE JOB"

The deputy state-fire-marshal's duty brings him to the scene of the fire in time, as a rule, to observe the action of the materials used in the construction of the building, at the time when these materials are exposed to actual fire conditions. His observations are worth a great deal more to the public than a host of theoretical tests made upon the materials mentioned. His work will be made much more complete by the employment of a competent photographer, who, acting under his directions, will make pictures of the burned structure before the "rubbish" is cleared away, and from points that will serve to illustrate the points that the deputy state-fire-marshal wishes to bring out in his report.

The deputy state-fire-marshal would have access to the records of the fire department as well as to the insurance department. Between the two he would be in a position to file a very complete record of all of the fires that occurred in the district assigned him. With these, he could send in written reports of his observations, accompanying these with illustrative photographs whenever the latter served to bring out the weak points (from fire-resistant standpoint) of any material.

It cannot be doubted that this would score heavily against frame construction. There would be times when these reports and illustrations would show that a so-called "brick-house-safe-from-fire" had burned down. But it would be found that the so-called "brick" house was merely a brick shell, holding a large cubic content of inflammable materials. In cases of general conflagrations, as where several residences had caught fire from each other, a group photograph could not fail to show a greater salvage and a greater protection to contents, in the houses even partly brick, than in those that were all frame.

A trained observer would be able to see and report authoritatively, the origin of the fire and the path in which it spread. No one will doubt that, in the great majority of cases, it would be found that the fire was spread through wooden construction, rather than brick.

FOUR BUREAUS URGED

Somewhere, either at one central point in the country, or at several points, central to the East, the South, the Middle West and West, offices should be located, to receive and tabulate these reports. Each office should be in charge of a man capable of preparing readable "copy" for newspaper work. Receiving, as he would, illustrated stories of the action of fire, in addition to fire statistics, he would be in a position to "place" fire stories in the daily papers.

There is no doubt of the papers being willing to publish these stories, if they were given them within a very short time after the fire had occurred. For that reason, the deputy state-fire-marshals should have instructions to telegraph stories that were of extreme interest, and the news status of the central bureaus should be established, so that they would have the benefit of press rate on all such telegrams.

The campaign of burned clay against lumber should be thought out, to the very minutest detail. When ready, it should be pressed to the uttermost limit. The central bureaus should work in harmony, and, where a "fire story" had national interest, the newspaper copy and photographs should be sent from the bureau in the district where the fire occurred, to each of the other bureaus —sent complete, with prints of the photographs and everything else that would assist in "putting the story across" while it was still news.

The time would come when newspapers would look to these central bureaus for stories and, instead of being in the position of reluctantly accepting the articles that came from them, be willing to see, in these bureaus, real distributors of information, and seek the material that was prepared in them.

TRUTH IS ESSENTIAL

This time will not come, however, until the newspaper world is convinced that the bureaus are "on the level." For this reason, the man or men who have the work of organizing these bureaus in hand should impress upon those that are put in charge of them, the importance of being truthful.

Under the direction of one of these central bureaus, the national advertising could be prepared. Books could be published at intervals, giving facts as they were found in hundreds of cities. The bureaus could be of immense assistance to every movement that was started in any part of the country, for extended fire limits or better building codes. They would be at work, day and night, increasing the markets for burned clay, by decreasing the demand for lumber. Their work would be in the open—everyone would know that they were working in the interest of brick, hollow building tile and other burned clay products that enter into building construction, yet no one could say that, because their motive was mercenary, it was not, at the same time, for the public welfare.

Several times, in writing this series of articles, the writers have mentioned the danger that confronted the manufacturer of brick in the publicity that has been given the claim that "brick was as cheap as frame," or that "a brick house could be built for ten per cent more than frame."

There is no doubt of the truth of the statement that a certain type of house—as, for instance, the "cottage" that was built on Chicago's lake front for the purpose of demonstrating the comparative damage done to brick and frame construction by fire, could be built for practically the same price in brick as in wood. The record of these two houses is that the frame house cost about 97 per cent of what it cost to build the "brick" house. The sole difference between the two was that the "brick" house had brick exterior walls, while the frame house was ceiled with 5/8-inch drop siding.

But that type of house is not the type that is being built regularly. If the brick man were to depend upon that type for any considerable portion of his business, it is feared that he would not fare very well. Opposed to the showing made in these two "built to burn" houses is that which arises in countless instances, where brickmakers cannot build the houses they would like to build,

for anything like only ten per cent more in brick than the same houses would cost in frame.*

It seems unreasonable to apply one broad term—such as "frame"—to all classes of wood construction. It is just as unreasonable to apply the broad term "brick" to everything from the kind of construction used in the "brick" house built for the fire test in Chicago, and the brick-exterior-wall, hollow-tile partitions and metal-lath ceilings, used in the model residence that has been built by the brickmakers of America at the Panama-Pacific International Exposition.

COMPARISONS OTHER THAN INITIAL COST

If any great publicity is to be given "comparative costs," then comparative beauty, comparative serviceability, comparative upkeep and comparative sales value after a term of years, must be given equal emphasis. And beauty is one of the most important of these items. A tinder-built bungalow, stained to attractive colors, will gain friends where an unpainted, common-brick wall, laid in uncolored cement mortar would repel. *It is not until you come into the more expensive forms of residence work that the brick residence is as good to look upon as its flimsy frame cousin.*

The fact that "brick does not need painting" assumes a very superior common-brick, carefully laid—or face-brick. Badly selected face-brick, badly laid, are distasteful. A badly built frame house, painted to one of the delightful color combinations shown in the paint manufacturers' literature, will be apt to bring fully as good a price, at auction—or will, until the public is given a thorough knowledge of the fire hazard that it buys when it takes title to a wooden house.

The "cooler in summer and warmer in winter" argument in favor of a brick house is also a little far fetched. It is true, in some kinds of brick construction. But it is not true in the kind of brick construction that "costs only ten per cent more than frame."

That the upkeep of a brick house is less than the upkeep of a frame house is undoubted. If faced with good face-brick, well laid, its brick surfaces will never need painting, and if the mortar is properly mixed, the walls will be as good looking, twenty years after the house was built, as it was the day the house was finished—that is, if the sills and lintels are cut or otherwise made with proper "drips." But all of these things cost money, and all of them get us a little farther away from the brick house that "costs only ten per cent more than frame."

Following this comes the fact that, once assured that the house will not lose attractiveness through exposure to the weather, year in, and year out, the owner can sit, calmly awaiting the rise in value that will come to his land, knowing that the age of the house will not make the building lose value as fast as the land gains it.

The sure selling points are safety from fire, initial beauty and permanancy. These three things are enough to carry a considerably increased cost. They are easily demonstrated and easy to believe.

First in importance, however, is safety. That is another way of saying "safety first." And the whole brick manufacturing and selling trade could afford a solid year's campaign on that one point.

It is not necessary to prove that brick construction is safe. It is only necessary to prove that frame construction is not. The other will follow by inference.

SUBSCRIBE FOR LUMBER PAPERS

Not the least important work of these central bureaus would be to watch the promotion work of the lumber interests, and be ready to disprove any publicity of doubtful veracity, or publicity so colored as to conceal patent facts while emphasizing insignificant ones.

Every piece of literature issued by the men interested in furthering the use of wood for building construction should be collected and, where possible, turned against them. In this work, the bureaus could interchange, and thus make their work very effective.

Every magazine and trade paper that caters to lumber should be subscribed for, and kept on file in the bureau offices. In these will be found the foundation for future publicity, since the trade journals in the lumber field represent the progressive thought of that industry.

As the war news comes to us from battle-scarred Europe, we are learning its greatest lesson—preparedness. The "war-machines" were built to act on lines lain down by "information departments." The "war-machine" of the brick manufacturer will be a publicity fund—the "war department" a group of publicity men. Back of all these, supplying a never-ending supply of information, will be the deputy state-fire-marshals, with their trusty cameras.

*EDITOR'S NOTE—By a curious coincidence, a letter has reached this office, which is written by a Texas brick selling agency, and which makes practically this statement. It will be found in the Letter Box, in this issue of "Brick and Clay Record."

It's Different with Brickwork

Bonding new to old concrete is a matter that requires the greatest care, as fresh concrete does not adhere strongly to concrete that has set. New and old concrete can be joined, but the difference in the strength of such a connection is always uncertain. When concrete is being laid, there is always danger when part of the work has set over night, for instance, that the remainder of the work will not stick to the old part. Retaining walls will occasionally give evidence where one day's work ended and the next began, and frequently a crack will occur along this line.—"Concrete-Cement Age."

Bricklayers Join "Build Now" Movement

The "Build Now" campaign has received another push. This time it comes from organized labor. It has been announced through President Robert R. Moore, Vice-president J. W. Barker, and George Stewart, of the Bricklayers' Union No. 1, of Alabama, that its local gives official endorsement to the movement to urge prospective builders to start their projects at once. This is said to be the first recognition given the campaign by union labor.

But going further than mere paper endorsement, the bricklayers have agreed for a period of ninety days to do any class of work in the building line on a sub-contracting basis at a reduction from normal prices of from five to fifteen per cent. After the expiration of the ninety-day period, however, normal prices for labor will be restored.

Buy it Now

You have had some prosperity. The fact that you are "in business" today, after a lowered tariff, a change in administration and a world-war have done their best—or worst—to put the rollers under you, proves it. Pass some of that prosperity along! Every dollar you spend now means helping someone who is hard up. For the general good of the country—upon which you depend for your future prosperity—buy what you need, now.

The Relative Importance of Clay Products According to Production During 1913

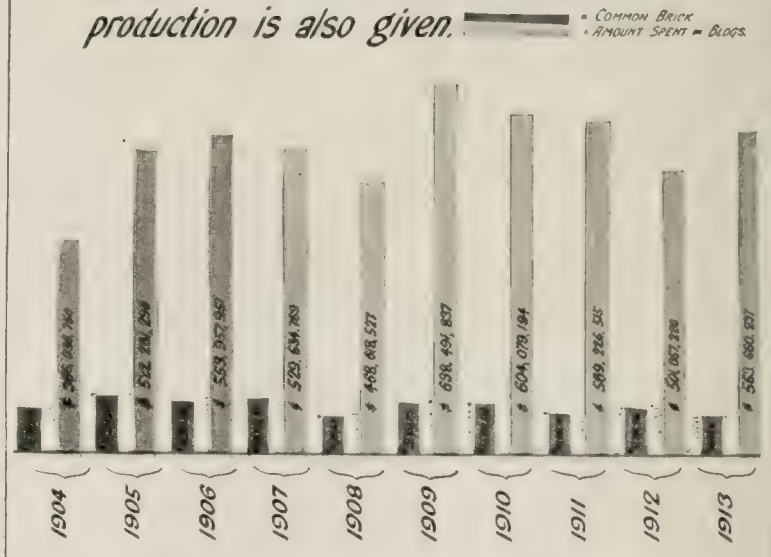
COMMON BRICK	27.6 %
POTTERY	20.9 %
FIRE BRICK	11.7 %
SEWER PIPE	8.2 %
PAVING BRICK	6.7 %
FACE BRICK	6.0 %
FIREPROOFING	4.8 %
DRAIN TILE	4.7 %
ARCHITECTURAL TERRA COTTA	4.3 %
FLOOR, WALL and ROOFING TILE	3.4 %
MISCELLANEOUS	1.7 %
	100.0 %

It will be noted that the amount of common brick produced in the United States is larger than the total production of face, paving and fire brick combined.

Brick and Clay Record

The Relation that Common Brick Production has to the Amount Spent in Buildings

In the 25 largest cities in this country, the valuation of the Buildings erected during the past ten years are shown in the table given below. The value of the common brick production is also given.

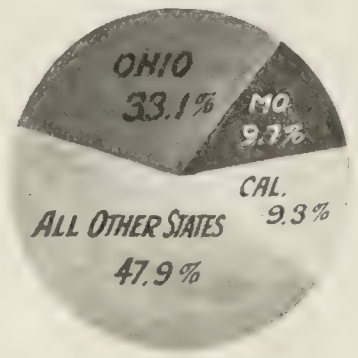


Note that common brick has not gained in proportion to the gain in building construction.

Brick and Clay Record.

Sewer Pipe Production

Showing where most of the sewer pipe is made in this country.



Ohio leads all other States in the manufacture of sewer pipe, producing about one-third of the nation's total production.

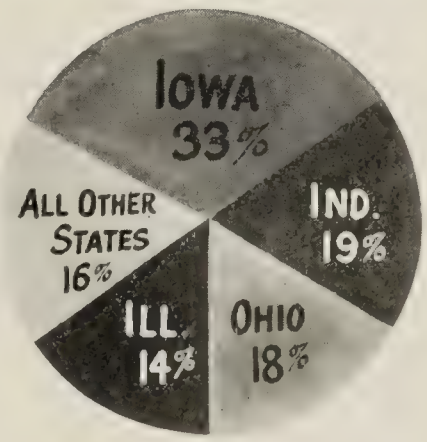
Missouri and California come next in amount produced, both being about equal.

The remaining 47.9% is divided among the several other states making this commodity.

Brick and Clay Record

Drain Tile Production

The State of Iowa produces nearly one-third of the total amount of drain tile made in this country



Of the remaining 67% Indiana, Ohio and Illinois take by far the larger portion, leaving only 16% as the amount of drain tile produced by the other 44 states in the Union.

Brick and Clay Record.

A PART OF "BRICK AND CLAY RECORD'S" EDUCATIONAL EXHIBIT AT THE N. B. M. A. CONVENTION

These Charts are Sixteen in Number and are in Color. Fac-Similes will be Published in Subsequent Issues of this Magazine. The Charts are the Beginning of a Larger and More Comprehensive Collection, that will be Prepared by "Brick and Clay Record" and Loaned to Clay Products Organizations for Exhibition Purposes

Clay Products in Canada

Being a Review and Forecast of the Progress of the Burned Clay Industry in the Eastern Part of Canada

By J. Keele

Canadian Geological Survey.

(Continued from April 6 issue.)

The shales already indicated as occurring in the vicinity of Levis might be used to advantage for this class of ware, as they take a good salt glaze, and are by far the most refractory shales found in the two provinces. With water transportation on the St. Lawrence and rail connection with all the principal centers, an important industry in vitrified wares might be established at Levis.

The carboniferous shales of the Maritime Provinces furnish the necessary raw materials for the manufacture of sewer-pipe, as well as the coal for burning them. One plant has been established for several years at New Glasgow in Nova Scotia, which is now in a flourishing condition.

There is room for another sewer-pipe plant at Moncton or in the Grand Lake coal area of New Brunswick. Ware like this is not like common brick, inasmuch as it can stand the freight charges for long haulage by rail.

ELECTRICAL CONDUITS

These are used for laying wires underground, their requisites being strength, straightness and impermeability. Conduits are generally made from fire-clays or some semi-refractory clays or shales, finished with a salt glaze. None are produced in Canada, but hundreds of thousands of dollars worth are imported annually from the United States. The telephone and telegraph companies prefer to go to the additional expense of conduits because of the saving in cost of maintenance and the superior service they give.

The Maritime Provinces is the only place where raw materials for this purpose are available. There is now a sufficient market in Canada to keep a large plant running on conduits alone, or it might be combined with the manufacture of sewer-pipe and silo blocks.

ARCHITECTURAL TERRA COTTA

None of this material is produced in Canada, but it is now used extensively in all of our cities. It is generally made with a fire-clay or a buff burning semi-refractory clay, the finished ware being coated with a glaze or enamel, either white or tinted in color, or mottled to imitate granite. An industry of this kind requires a large staff of skilled workmen, for whom employment must be found all the year round.

Now that the Canadian market for architectural terra-cotta is large, a plant situated for instance, on the Welland Canal, where fire-clay and coal could be brought by barge, ought to succeed.

The manufacture of enameled brick and decorative tile for indoor work could be combined with the terra-cotta, as the same body and enamels could be used for all. The manufacture of red and buff terra-cotta, without a glaze, was carried on at the Don Valley Brick Works in Toronto same years ago, but it was discontinued.

This industry might be revived again to advantage. Cornices, string courses and panels of this material could be combined with brickwork and be made very effective in many classes of buildings.

The Lorraine shales, the weathered top of the Queenston shales and certain of the surface clays can be used for this purpose.

ROOFING TILE

The manufacture of roofing tile is not carried on in any part of Canada on a commercial scale. A few clayworkers in Eastern Canada have made tile for roofing houses in the vicinity of their plants, but none of them care to undertake making them for sale. The manufacture of roofing tile at the Ontario Government plant at Mimico has passed the experimental stage. They are now producing red tiles from the Lorraine shale which is as good in color and body as any of the imported tile. These tile are for the new Asylum Buildings at Whitby and are of the Spanish or 'S" type. A large quantity of roofing tile is imported annually into this country for use on the best class of buildings. The shales in Ontario or the Maritime Provinces will supply the raw material, but a considerable amount of skill is required to make them.

FUEL

Fuel is one of the most important items to be considered in the future of the clayworking industry in Canada. Not so many years ago, wood was the only fuel used for burning. It was plentiful and cheap, and no very high temperatures were required for the class of clay wares then being made. Wood is increasing in price, and harder to obtain in large quantities; higher temperatures with longer sustained fires are required for the better class of clay wares and more coal than wood is now used in the clayworking industry in this country.

No coal occurs in either the Provinces of Ontario or Quebec, and very little in New Brunswick. Nova Scotia coal is shipped as far as Montreal; very little of it comes further west. Most of the coal used in Ontario comes from Pennsylvania.

There is great waste of coal in the clay industry, due to defective or poorly built kilns, badly constructed furnaces giving imperfect combustion, careless firing and other causes. The use of producer gas or a perfect combustion furnace are two methods proposed by the brickworks' engineer for the elimination of waste in fuel.

A discussion of the various devices in kilns and furnaces is beyond the scope of this paper, but it has been demonstrated beyond question in a few plants that an immense saving of fuel can be effected and the smoke nuisance almost eliminated.

REFRACTORY GOODS

Clays suitable for the manufacture of refractory or even semi-refractory wares, practically do not occur in the

provinces of Ontario and Quebec, as far as we know at present.

Fire-clay is known to exist at one point in Ontario, but is situated too far from transportation to be of economic value. This occurrence is situated on the Missinabi River about 40 miles north of Cochrane, a point on the National Transcontinental Railway. The deposit consists of white, pink and yellow plastic clays, the white clay only, being a fire-clay. Borings made on the deposit show at least 25 feet in thickness over a considerable area, 15 feet of which is white clay.

A four foot bed of semi-refractory clay, softening at a temperature of about 1,600°C. is found underlying the coal seam in certain portions of the Grand Lake coal area of New Brunswick.

Plastic fire-clays occur at three localities in Nova Scotia, at Shubenacadie, Inverness and Middle Musquodoboit. There is no railroad connection near the latter deposit. A large body of plastic felsite, which in this instance is a refractory rock but not plastic, occurs at Coxheath near Sydney. When this material is crushed and mixed with enough plastic fire-clay to make it workable, an excellent quality of fire-brick can be produced. No fire-brick is made from the native refractory clays in the Maritime Provinces. One of the principal reasons for this is that the Scotch fire-brick can be delivered from steamships at a very reasonable rate.

Stove-linings and special shapes of fire-clay goods are made at St. John and Montreal in the Province of Quebec. The fire-clays for this purpose are imported from the State of New Jersey.

Silica brick are made from crushed quartzite, to which is added about 3 per cent of lime for bonding purposes. These brick are molded by hand, and burned in kilns at a very high temperature. The raw material for this class of refractory ware occurs in Canada, but the cost of fuel for burning is large.

WHITEWARE

This term is used here to include table-ware, sanitary and electrical porcelain, white floor and wall tile. The raw materials entering into the composition of all whiteware bodies are; 1, kaolin, which is generally known by the trade name of China clay; 2, ball clay; 3, feldspar; 4, flint.

A limited amount of China clay is produced in Quebec, at a point about 40 miles northwest of Montreal. This is the only locality, so far as known, at which it occurs. No ball clay has so far been found in Canada. Canadian feldspar is mined north of Kingston, Ontario, and shipped to New York State for grinding. Flint is generally ground quartz in America. Most of it is produced in the State of Maine, where it is ground for use in potteries. A large amount of fire-clay is also used in the pottery industry, for making saggers—which are practically fire-clay boxes for holding the ware while burning. Whiteware industries are often situated at points where none of the raw materials occur, except possibly the fire-clay. Convenience of transportation, a cheap fuel, and a large supply of skilled labor are the essential features of a pottery center.

No table ware is made in Canada. There are two plants at St. John, Quebec, which manufacture sanitary porcelain.

Electrical porcelain is now made in Hamilton, Ontario, by the Canadian Porcelain Company. Their output is chiefly large insulators for power lines. The General Electric Company also manufacture a certain amount of their porcelain at Peterboro. A plant for the manufacture of white vitrified floor tile was recently built at Kingston.

Every particle of the raw material used in the above industries is imported from England and the United States. As the consumption increases these factories will be enlarged or probably other factories will be established at various points in the future.

Economic considerations are probably against the establishment of an industry for the manufacture of table-ware in Canada. These articles will continue to be imported for a considerable time to come. The only difference will be that a larger proportion will come from England, France and the United States, which hitherto came from Germany and Austria.

REQUIREMENTS OF THE INDUSTRY

The time is past when anything that looked like a brick could be sold at a profit. The future demands will be more exacting, so that those clayworking plants which do not strive after excellence in production or are located on poor material, will have to drop out of the business.

The weak spot in the clayworking industry is the lack of technical knowledge on the part of the majority concerned in it. Many costly mistakes are made every year in various parts of the country, due either to poor location, wrong equipment, or defective raw material.

Considerable skill and experience is required to build a modern clayworking plant and start it into successful operation, but the tendency seems to be to use the cheapest advice, on the popular assumption that anyone can make brick or tile.

Clays contain more disagreeable surprises for unwary manufacturers than any other kind of raw material, and it is often possible to detect and provide against these troubles in the preliminary examination.

The raw materials used in whiteware industries are fixed, and to a certain extent, unvarying. It is possible to foretell very closely what kind of ware will be produced in practice.

The things to be considered in starting an industry of this kind are: (1) a market for the wares; (2) location of plant; (3) fuel supply; (4) conditions favorable to a permanent supply of skilled labor. These questions of course are dependent on the vital one, whether foreign competition can be met. In the manufacture of clay products for structural materials, where the raw material is of an infinite variety, no reasonable trouble or expense should be spared during the preliminary investigations of the proposed site.

The following figures, compiled by Mr. John McLeish of the Bureau of Mineral Resources and Statistics of the Department of Mines, shows a considerable annual increase in the output of clay products, during the last three years:

Value of Production of Clay Products by Provinces.

	1911	1912	1913
Nova Scotia	$ 274,249	$ 272,053	$ 332,272
New Brunswick	38,000	54,910	62,269
Quebec	1,341,467	1,680,460	1,606,816
Ontario	3,916,575	4,864,700	5,220,467
Total value for Eastern Canada	$5,570,291	$6,872,123	$7,221,824

Extent of Production and Consumption of Clay Products in the Dominion

Total value of clay products produced in Canada during 1913	$9,504,314
Total value of clay products imported into Canada during 1913	$7,237,885

Owing to the depression in the building trade during the latter part of the season of 1914, it is probable that some decrease will be shown in production of rough clay products when the returns are compiled. The clay industry, however, does not suffer to the extent that many others do, in times of general depression.



The "Safety First" Slogan of the Railroads Extends to the Comfort of Its Men. An Employe Well Housed Is the Best Insurance Against Accidents. The Hollow Tile Bunk House Gives the Best Environment for the Man Who Works on the Track

Railroad Builds Hollow Tile Bunk Houses

Southern Pacific Company Sets New Standard in Railroad Construction by Building Its Section Houses of Burned Clay

THE SECTION HOUSE, that "tramp" on the landscape, and in many instances the only object that breaks the monotony of long stretches of prairie to the weary traveler, is about to undergo a regeneration.

The tumble-down, ofttimes unpainted shack or reconstructed box car, which serves as a shelter and home for the section-men, will soon be a relic of the past and in its place will appear a permanent, sanitary and fireproof building of burned clay—if the splendid example of the Southern Pacific Railway Company is followed.

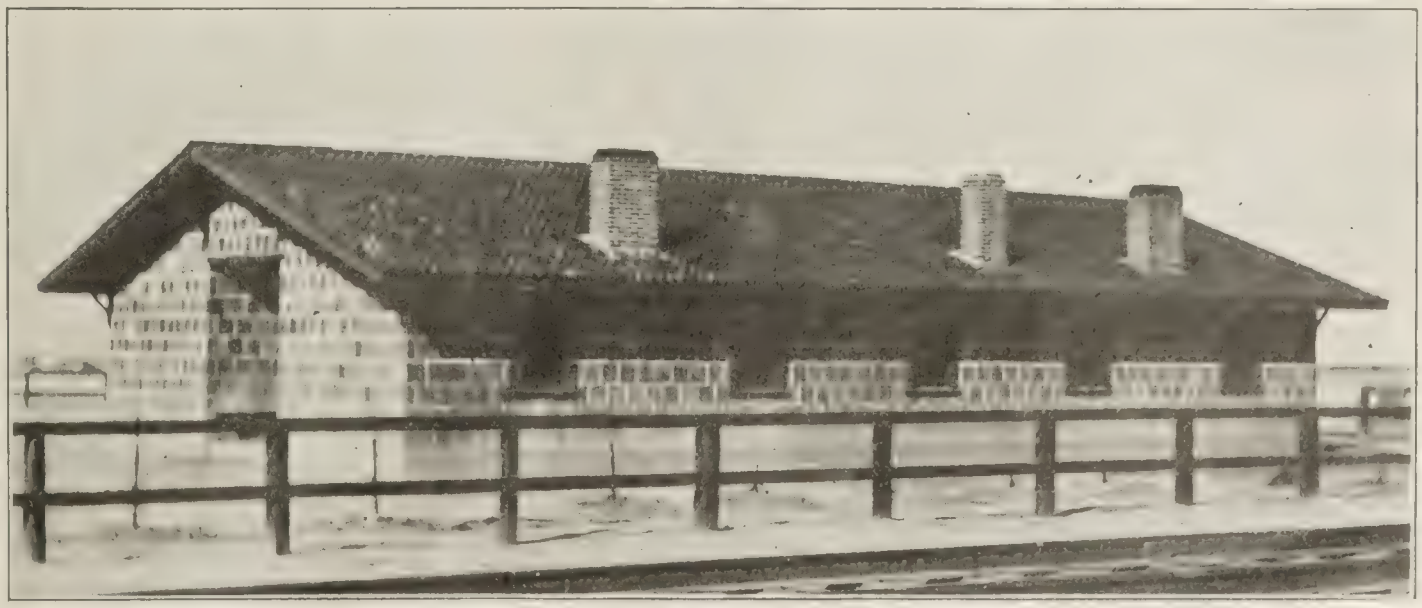
We are interested in seeing the farmer build more permanently. He is building many of his structures of wood, where they should be constructed of burned clay. We are using the argument that the decreased cost of maintenance on permanent buildings will soon cover the slightly increased initial cost of burned clay construction over frame, and pay him a handsome dividend for many years.

The railroads are very much like the farmer in that they build their small buildings—section houses, shelter sheds, tool houses and many other similar structures—of wood. The cost of keeping these buildings in good repair and appearance is by no means a small item in the annual maintenance budget.

There is a false impression abroad in the land that it costs anywhere from twenty-five to fifty per cent more to build a house of brick or hollow tile than with wood. Not only is this impression general with the building public, but from all indications it seems to have gained credence in railroad circles, for year after year the railroad carpenter forces are continuing to replace decaying wooden buildings with other buildings of the same material. There are some exceptions, notably where wooden railway stations in some of the larger towns are being replaced with structures of brick or concrete, but the smaller stations and bunk houses still furnish a good business for the lumber man.

But a different spirit has been quietly working in railroad circles in recent years. The constantly increasing cost of maintenance on every hand is dictating a new policy from the president down to the section-hand, and that is: Reduce the cost of operation. The general manager and chief engineer are finding that it pays to buy better rails, build better bridges and buy more improved equipment, because they last longer and it costs less to keep them in repair. Better equipment and materials may be more expensive than those of a poorer quality, but they pay a good profit on the additional investment in the end.

An interesting incident is told of the late J. Pierpont Morgan, the great railroad financier. In his railroad operations he purchased the controlling stock in a certain western road. One of the very first moves he made was to eliminate a number of bad curves in the company's right-of-way, while his associates and the company's officials looked on in dumb surprise. On being asked his reasons for spending so much money on what seemed a very unnecessary piece of work, Mr. Morgan showed his doubting friends how, by eliminating these curves and thus reducing the cost of operating over



With a Cost That is Only Slightly Above That of Frame, There is Very Little Excuse for a Flimsy Type of Construction Where Hollow Tile is Obtainable. And When the Items of Paint and Repairs Are Considered, It Seems Little Less than Folly to Invest Good Capital in Perishable Wood

them, he could save the cost of making the improvements in a very short time. And he did.

It is this spirit, together with the merits of hollow tile as an insulator against extreme changes in temperature, that, no doubt are responsible for the hollow tile bunk houses shown in the accompanying illustrations.

It is a well known fact that while the days in southern California are often very hot, the nights in a certain season of the year, are very chilly. A workman cannot do good work unless he is comfortably sheltered, and with the antiquated type of frame bunk house, proper housing conditions were not possible. The flimsy frame type of dwelling offers little comfort during the heat of the day, or the chill of the night, and is, therefore, not the best environment for the man who is compelled to spend long hours in the burning sun repairing the track and keeping in safe condition the path of the speeding trains.

The Southern Pacific Company has realized this fact and has looked about for a material that would make an ideal shelter for its section men. They found it in the hollow clay building tile. The insulating air spaces in the tile provide the best protection against the hot sun, keeping the inside of the dwelling cool and comfortable. When the chill of night comes on, the same properties in the tile prevent any marked change of temperature inside the house, and as an insurance against any extreme change in temperature, fireplaces are provided which, with a very small fire, will rapidly take any chill from the rooms.

The buildings range from forty to sixty feet in length and are about thirteen feet wide. The rooms are all on one floor and are separated from each other by tile partitions. A tile roof and brick chimneys complete these model structures of burned clay. The houses have plenty of light and excellent ventilation, and are built to accommodate from four to ten families. They are located in the Imperial Valley on the Tucson and Los Angeles divisions of the Southern Pacific, at Pope, Heber and Estelle, Cal. The tile used in their construction was purchased from a Los Angeles concern, and the buildings were erected by the company's own forces.

It is needless to state that the company's officials are well satisfied with these houses. The superintendent states that it was found that a much lower temperature could be obtained with the hollow tile construction than in a frame building, varying from two to ten degrees.

In the construction of these houses, the Southern Pacific has established for itself not only a reputation for humanitarianism—great and good as that may be—but it has set an example that other railroads would do well to follow. It has put itself on record as believing in permanent buildings as a feature of economy. These hollow tile bunk houses, replacing the adobe houses and reconstructed box cars, will last for many years, with hardly any repairs and no paint, and their appearance will be a credit to the company's right of way. Then, instead of being a constant source of expense. these houses will pay a dividend on the investment.

Decreased Production of Sand-Lime Brick

According to figures recently compiled here and just made public, the value of the sand-lime brick output in 1914 amounted to $1,058,512, a decrease of $179,813 as compared with 1913.

In the gathering of the figures it was shown that fourteen of the states showed a decrease out of the twenty-three, while only nine showed an increase. The principal increases were in Florida, Indiana, South Dakota and Wisconsin, while California, the District of Columbia, Massachusetts, Michigan, New York, Pennsylvania, Texas and Washington showed decreases.

More than 24 per cent of the total output in 1914 and more than 25 per cent in 1913 was manufactured in Michigan. Minnesota was second in 1914, reporting 11.27 per cent of the total value, displacing New York, which was third with 10.17 per cent of the total value.

In 1914 the average price per thousand for common sand-lime brick was $5.99, as compared with $6.27 in 1913, and $6.46 in 1912, and $6.09 in 1911. In 1914 the average price for selected face-brick was $9.08 as compared with $10.61 in 1913. This industry has been established in the United States since 1901, when the first plant started in Michigan City, Ind. Since that time it has passed through the various stages of a new industry. In the beginning it suffered from the "boomer," whose glittering promises to make brick for a few dollars a thousand, that would sell in competition with high-grade clay face brick caused plants to be established for the manufacture of sand-lime brick without regard to market, transportation facilities, or even a supply of suitable material.

Buy it Now

If your stock is accumulating and orders are not coming in as freely as you would like to have them, it is because someone else is waiting for the return of prosperous times, before he decides to build. He in turn, may be waiting for someone else to make up his mind to rent, or buy. You may be aiding in the indecision of that buyer, by holding up some purchase that ought to be made immediately. "Buy it Now" if you need it. You know the power of a good example.

Statement of Ownership

Required by the Act of August 24, 1912.
Statement of the Ownership, Management, etc., of

Brick and Clay Record

published semi-monthly at Chicago, Illinois.

Editor

Frederic W. Donahoe.....Chicago, Ill.

Manager

H. H. Rosenberg.....Chicago, Ill.

Advertising Manager

David B. Gibson.....Chicago, Ill.

Publisher

Kenfield-Leach Company.....Chicago, Ill.

Stockholders

Owning 1% or more of the total amount of stock.

F. B. Cozzens.....445 Plymouth Court, Chicago
H. H. Rosenberg..... " " " "
S. J. Leach..... " " " "
L. W. James..... " " " "
F. J. Sauer..... " " " "

Known Bondholders, Mortgagees and Other Security Holders

None

(Signed) H. H. Rosenberg, Manager

Sworn to and subscribed before me, this fifth day of October, 1914.

F. J. Sauer, Notary Public
My commission expires Sept. 17, 1916.

Questions and Answers

Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants Fire Brick Dimensions

653. *California—We have noticed with interest your valuable table published in the Superintendent's Department of the March 16 issue. If it is agreeable to you, we should like to use this in a price-list which we will issue within a few months. Will you kindly give us the dimensions of the key, arch and wedge brick used in your tables?*

We will be very glad to have our readers use this table in their printed matter, if it is useful to them. The sizes used were as follows:

No. 1 Key—9x2½ thick x 4½ to 4 wide = 112 brick to circle 12 ft. inside diameter.

No. 2 Key—9x2½ thick x 4½ to 3½ wide = 65 brick to circle 6 ft. inside diameter.

No. 3 Key—9x2½ thick x 4½ to 3 wide = 41 brick to circle 3 ft. inside diameter.

No. 4 Key—9x2½ thick x 4½ to 2¼ wide = 26 brick to circle 1½ ft. inside diameter.

No. 1 Wedge—9x4½ wide x 2½ to 2 thick, tapering lengthwise = 102 brick to circle 5 ft. inside diameter.

No. 2 Wedge—9x4½x2½ to 1½ thick = 63 brick to circle 2½ ft. inside diameter.

No. 1 Arch—9x4½x2½ to 2 thick, tapering breadthwise = 72 brick to circle 4 ft. inside diameter.

No. 2 Arch—9x4½x2½ to 1½ = 42 brick to circle 2 ft. inside diameter.

Some Burning Questions Answered

651. *Illinois—I have a few questions that I would like to see answered through your Q. & A. department, and, for simplicity, have given them initials; they are: (a) Can a kiln of brick be raised in temperature too fast—that is, between watersmoking and incipient settle—assuming that there is no carbon to oxidize? (b) When would you first cut the draft, before or after the bottom peep-hole clears up? (c) Does the heat work to the bottom quicker with much draft, or with little draft? (d) What has been your experience as to the length of the reducing period, on shale, in order to get black brick? (e) Has it been your experience that the bottom improves most during smudge? (f) Do you have better success with dark burns by cooling slowly or quickly?*

(a) It is good practice to give the kiln all of the heat that it will absorb without starting settle. Raise as fast as its possible, without wasting any time after you have secured a draft, and after the brick, brickwork and flues are warmed through. This requires an open fire, a thin, clean fire, and a draft just short of a roaring draft. Do not allow the fires to burn so fiercely that they roar.

(b) Cut the draft just short of, or just at the point where the kiln clears up at the bottom. No set rule can be given, but it is well to work to keep the draft practically the same throughout the burn, and up to, but not including the reducing period. If the draft is cut too early, the heat tends to bank in the upper half of the kiln, the under-flue work does not become hot, and this robs the bottom brick of the heat that should be collecting and held during the finishing stage of the burn. Constant lament is heard as to the inability of certain burners to "get the bottom hard." Usually the cause is that noted in this paragraph; the bottom structure of the kiln is not heated sufficiently, due to improper use of the dampers and to the desire to save fuel. When the kiln is clear, to the bottom, the draft may be cut, to control the flow of heat and to dam it up in the kiln. This makes the kiln a collector and holder of heat units.

(c) Undoubtedly the heat works to the bottom more quickly with a heavy draft than it does with a lighter draft, but, by the same token, "much" draft whips it up and out of the stack. Therefore, to successfully get the bottom with a strong draft, it is absolutely necessary to replace the heat that has been stolen from that point by the same agency as brought it there. This can be done only by carrying a dangerously high fire and this defeats all effort at economy in burning.

(d) Length of time depends entirely upon the iron content, the use of the damper, the kind of coal used and the temperature reached at the coloring period. It is possible to color absolutely black in eight hours, but it is not an average record.

(e) As a rule, the bottom does improve during smudge. If the damper is not too tight, the entire kiln has a tendency to become more uniform.

(f) This depends so much upon the character of the brick and the manner of setting that any answer would be right or wrong, according to certain conditions. It would be well to read "On the Burning of Rough Texture Shale Brick," by Walter A. Hull, in Vol. XVI of the Transactions of the American Ceramic Society. This can be obtained from Edward Orton, Jr., secretary, Columbus, Ohio, for $5.50 in paper, or $6.25 in cloth.

Wants Literature on Bauxite Brick

658. *India—As we are interested in the making of bauxite brick, will you kindly let us know if you have any books published on the manufacture of same and if so, what price?*

Havard's "Refractories and Furnaces" devotes some space to bauxite brick and this book can be obtained through "Brick and Clay Record's" book department for $4.00. In the May 19, 1914, issue of "Brick and Clay Record" an article was published by E. T. Montgomery, of Alfred, N. Y., in which some space was also devoted to this subject. Were it not for the fact that this particular edition of "Brick and Clay Record" is exhausted, we would be glad to send you a copy. We have asked the secretary of the American Ceramic Society to send you a list of the papers and discussions contained in the "Transactions" and believe that among these you will find

some data on the subject of bauxite brick. If any of our readers have made notes or clippings from articles on the subject of bauxite brick and have recorded the sources of information, will they oblige the editor by sending the proper information to this office?

Using Steam Shovels in Shallow Work

660. *Tennessee—Is it profitable or practical to work a clay pit with a steam shovel, when tram cars are used and the shovel would be on same track? The bank is only five to six feet deep and there is an eight inch to ten inch stripping. The daily capacity is* 75,000 *brick.*

A plant having a daily capacity of 75,000 brick requires approximately 195 cubic yards of clay per day. A small steam shovel should dig from 25 to 35 cubic yards per hour in shallow work or a minimum of 250 yards per day of ten hours.

Manufacturers of steam shovels contend that using them is both practical and profitable on such work as you describe; these claims are based on average labor costs. If your labor cost is very much lower than the average, it may be that the figures given by the shovel manufacturers would not apply in your case, but the chances are strongly in favor of the shovel manufacturer.

Quantity of Fire Brick for Kiln Crown

659. *Illinois—Please let me know how many fire-brick it takes to put a crown on a thirty ft. kiln with a quarter pitch, also the rule you use to work the calculation, counting twelve brick to the foot.*

We would rather give you the rule than the calculation; it is: Multiply 15.5 by the rise of the crown, multiplied by the circumference of the arch formed by the radius of the crown.

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Questions Low Initial Cost of Brick Construction

A letter that will give some brickmakers food for thought comes from R. Dabney Johnson, of the Dabney Brick Company, of Galveston, Tex. He writes, under date of April 3:

We have had very little success in convincing the public here that a brick house can be built for ten per cent more than frame. The writer has had the question up with some of the best residence builders in Galveston, and they state that they would not build a brick veneer house for less than twenty-five per cent over frame, and that a brick house with eight-inch solid walls (or with an inch air-space) would cost from forty to fifty per cent more than frame. Nevertheless, the writer intends to build a brick house this year, and is working with architects, to secure a design that will be so economical in brick construction as to make a good showing (from a cost standpoint) as against frame construction in the same type. The architects he has approached, thus far, all claim that the figures made by the contractors are correct, but that there is a possibility of drawing the plans in such a way as to give the maximum of beauty with the minimum of expense, so far as the mason work in concerned. Evidently, the question has never been put up to them in just that way, before.

The writer has had the question up with the loan companies, also, and finds that they are not over anxious to loan money on a brick building that costs very much more than frame. They base this statement on the "income value" of the house, and make the statement that the amount they are willing to loan is based upon this, rather than upon the first cost of the building. To the argument that the building is a better permanent investment, with a lower repair cost, they answer that they must look to "renting value" in case of the property's coming back to them through foreclosure, rather than the permanency of the investment. To the argument that the building is safer as a fire-risk, they point to the comparatively low rates of insurance, and say that, in the event of fire, their equity is fully covered.

I have never seen such strong favoritism shown any individual interest, anywhere, as is shown toward lumber in this part of the country. Here, the contractor is, in reality, a speculative builder. He sells the lot, and he sells the plans for the house with the lot, on condition that he be given the contract for building the house. He specifies brick—generally common-brick—for the piers and the fireplaces. In cases where architects are employed, the specifications call for brick that will meet with the owners' approval. But only a small percentage of the residence work is done out of architects' offices.

The young home-builder is, as a rule, up against a very strong proposition. It is a long while before he secures a full title to his home. In the meantime, he must finance the venture as best he can. Here the contractor (or speculative builder) holds the young home-builder firmly, for from the time he offers the lot, the plans and the work, to the time when the house is completed; the contractor has arranged the loans and the payments that must be made upon them. It stands to reason that the contractors believe they can make more money out of frame construction than out of brick, or they would be building in brick.

There are some building and loan associations here that will build the house, and arrange the payments so that the home-builder can have a clear title in ten years. But the rate of interest is eight per cent—too much of a load to carry for the sake of building to suit one's self, rather than to suit the whims and ideals—and incidentally, the pocket—of the speculative contractor.

"Brick and Clay Record" urges the wisdom of a similar "analysis" of local conditions, upon every brick manufacturer and brick dealer, before giving publicity to the claim that a brick house can be built for a price

so close to frame as to make the difference negligible. It can be done, in some places, but not in others. It is bad business to make a claim in your own neighborhood, that actual practice will prove untrue.

A "Straight-from-the-Shoulder" Blow

Burt Ogburn, state dentist of Phoenix, Ariz., writes a letter which will bear reading and re-reading by every manufacturer of common-brick in the country. The letter, dated April 6th, reads:

Are there not some manufacturers of brick and hollow tile somewhere in the United States who have booklets describing the uses of their products in the construction of houses? If so, I would be pleased to have you put me in communication with them, as I am planning to build of brick. The lumber men are out in full force with their booklets containing pictures of frame and shingle houses and the same is true of manufacturers of cement. My duties as state dentist require me to visit all of the state institutions and I recently spent three months at the Arizona state prison. Concrete was used in the construction of the walls and buildings and I am now crippled with rheumatism as all of the buildings were cold and damp. I will be glad to receive an early reply to my letter.

"Brick and Clay Record" does not know of a single manufacturer of common building brick who has ever issued any book showing the "uses" of his material. As a rule, the manufacturers of common-brick, content with the idea that they are manufacturing the "best of all building materials" expect prospective users to travel long distances in order to secure the product of their plants. It is this attitude which has prevented the manufacturer of common-brick from keeping pace with the increased amount of building construction.

More, of course, has been done in connection with burned clay hollow building tile. Several individual concerns have issued booklets showing the uses and advantages of their materials and to them "Brick and Clay Record" would appeal with the request that they send whatever books they can afford to send, to the writer of the above letter.

Manufacturers of face-brick, notable Fiske & Company, Inc., of New York and Boston, and the Hydraulic-Press Brick Company, of St. Louis, have gone extensively into the matter of literature, setting forth the "uses" of their materials. This consists, in one instance, of a series of architects' plans and elevations. The Building Brick Association of America has also issued certain literature which would be of value to a man like Mr. Ogburn.

His letter is a strong arraignment of the lack of progressiveness which has marked brick manufacturers for years. Note what he says: "I am planning to build of brick. The lumbermen are out in full force with their booklets containing pictures of frame and shingle houses and the same is true of manufacturers of cement."

Going After Small Residence Work

N. P. O'Neal, of the Hope Brick Works, at Hope, Ark., writing in reference to some advertising literature which he is preparing, says:

Up until this year, we have always had as much business as we could do, often turning away orders, and we have never given much thought to brick veneer or small residence work. As things are now, however, every little order of this kind is just so much more, and we must land them or go fishing. Finding that fishing is a poor way to make a living, we are devoting more attention to the securing of little residence jobs. Five of these have been changed from frame to brick in the past two weeks, and we find that if we get half a shot at the owner before he gets started we can turn him around, so that he will build with brick in place of putting up a house of kindling wood. From present outlooks, we will make ninety per cent of the residence construction in our territory brick, for the next year, at least. All of the prospective builders whom we have changed from frame to brick are congratulating themselves, and they are passing the good word along, saying: "We did not know that brick houses were so cheap to build." Understand, we are not chopping prices of brick, but we are just out talking to people who are opposed to it. Understand, too, we are not saying that they can build with brick for about so and so much, but we are saying that they can do it for exactly so much, and that we will guarantee our statement. This is a new proposition, and it holds.

Mr. O'Neal has gone to a great deal of trouble and some expense to secure real figures, and he publishes them fearlessly. The fact that he is willing to stand behind them—which means that he will build the house for the price which he has stated in case the local contractor will not take the contract at that price—indicates that he has the courage of his convictions. No wonder that he says this is a new proposition and that it holds.

Says Clay Industry Has an Hierarchy

It is a poor rule that will not bend without breaking, and although "Brick and Clay Record" has a rule, relative to letters published on this page—which rule is that the writer's name shall also be published—there is a good reason for its not being published in this instance. The letter was signed, but the writer asked that his name be withheld. Read what he says:

I note your editorial in the April 6 number relative to your appeal for funds for the California brick house. Your conclusion that there was something wrong with the idea, or something lacking in your appeal, is entirely erroneous. The trouble is evident.

Clay products manufacturers are a set of disorganized snobs. They have a self-imposed aristocracy, made up of the House of Sewer Pipe (Lords); the House of Face Brick (Dukes); the House of Paving Brick (Princes Imperial); the House of Terra Cotta (Younger Brothers of the Princes Imperial); the House of Pottery (from which Kings spring); the House of Fire Brick (of Blood Royal) and, following these, a "common peepul"—sometimes recognized by the elect—and who are producers of the dross known as "common-brick," "building tile" and "drain tile."

Of course these meaner beings are all unworthy of any consideration on the part of the Royal Family. They are a necessary evil. They are small fry and don't "count for game" even.

As is the case with servants, these of the common herd have a superior or upper class, which, in the division of drain tile are known as the "makers of large tile" and, in the division of hollow building tile, as "fireproofers."

A man is known by the company he keeps, consequently it won't do for a "maker of large tile" to associate with those who make the smaller sizes, nor can the maker of "salt-glazed vitrified tile" stoop to hold communion with one who makes "soft tile"—a term applied to the product of a plant that does not cover its multitude of sins with a shining veneer.

All of them, from the Heirs Apparent to the lowliest slave in the clay pits, feel that there is a great need for something, but those in authority know (or feel that they know) that the great fault lies with the little fellow, who does not know his place. This little fellow does not show the proper spirit when he presumes to enter the "territory" of one of the Grand Dukes, and quotes a level price with him. It is anarchy, sedition, high treason and scandal in Court Circles.

There is no common ground upon which they can meet and go after business together. The Anointed Ones are not subject to the necessities of cost-finding, since their plants are superior and their grey matter more condensed, clarified and electrified. And the other fellow doesn't play fair, anyway.

What the industry needs is capital—capital great enough to bring small numbers, economy and lower costs, to the exclusion of the mixed-up mess that is now dignified by the name "clay products industry."

Until this comes, we need someone to teach us to lose sight of class distinction and the courage to start a republic among clay products men, one that will refuse to recognize the "Divine Right of Kings" in any of its producing centers.

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Cost of Coal for Steam-Power (Kent)

Horsepower.	Coal Consumption, at 4 lbs. per H.P. hour; 10 hours a day; 300 days per Year.					$2 per Short Ton.		$3 per Short Ton.		$4 per Short Ton.	
	Lbs.	Long Tons.		Short Tons.		Cost in Dollars.		Cost in Dollars.		Cost in Dollars.	
	Per Day.	Per Day.	Per Year.	Per Day.	Per Year.	Day.	Year.	Day.	Year.	Day	Year.
1	40	0.0179	53.57	0.02	6	0.04	12	0.06	18	0.08	24
10	400	0.1786	53.57	0.20	60	0.40	120	0.60	180	0.80	240
25	1,000	0.4464	133.92	0.50	150	1.00	300	1.50	450	2.00	600
50	2,000	0.8928	267.85	1.00	300	2.00	600	3.00	900	4.00	1,200
75	3,000	1.3393	401.78	1.50	450	3.00	900	4.50	1,350	6.00	1,800
100	4,000	1.7857	535.71	2.00	600	4.00	1,200	6.00	1,800	8.00	2,400
150	6,000	2.6785	803.56	3.00	900	6.00	1,800	9.00	2,700	12.00	3,600
200	8,000	3.5714	1,071.42	4.00	1,200	8.00	2,400	12.00	3,600	16.00	4,800
250	10,000	4.4642	1,339.27	5.00	1,500	10.00	3,000	15.00	4,500	20.00	6,000
300	12,000	5.3571	1,607.13	6.00	1,800	12.00	3,600	18.00	5,400	24.00	7,200
350	14,000	6.2500	1,874.98	7.00	2,100	14.00	4,200	21.00	6,200	28.00	8,400
400	16,000	7.1428	2,142.84	8.00	2,400	16.00	4,800	24.00	7,200	32.00	9,600
450	18,000	8.0356	2,410.69	9.00	2,700	18.00	5,400	27.00	8,100	36.00	10,800
500	20,000	8.9285	2,678.55	10.00	3,000	20.00	6,000	30.00	9,000	40.00	12,000
600	24,000	10.7142	3,214.26	12.00	3,600	24.00	7,200	36.00	10,800	48.00	14,400
700	28,000	12.4999	3,749.97	14.00	4,200	28.00	8,400	42.00	11,600	56.00	16,800
800	32,000	14.2856	4,285.68	16.00	4,800	32.00	9,600	48.00	12,400	64.00	19,200
900	36,000	16.0713	4,821.39	18.00	5,400	36.00	10,800	54.00	14,200	72.00	21,600
1000	40,000	17.8570	5,357.10	20.00	6,000	40.00	12,000	60.00	18,000	80.00	24,000

The above table shows the amount and cost of coal per day and per year for various horsepowers, from 1 to 1000, based on the assumed coal consumption of four pounds per hour per horsepower. This table is useful, among other things, in estimating the saving that may be made in fuel by substituting more economical boilers and engines for those already in use. Thus, with coal at $3.00 per ton of two thousand pounds, a saving of $9,000.00 per year in fuel may be made by replacing a steam plant of 1000 H.P., requiring four pounds of coal per hour per horse-power, with one requiring only two pounds.

It is usual to consider that a factory working ten hours a day requires ten and one-half hours of coal consumption on account of the coal used in banking or in starting the fires, and that there are three hundred and six working days in the year. For these conditions multiply the costs given in the table by 1.071. For twenty-four hours a day and three hundred and sixty-five days in the year, multiply them by 2.68. For other rates of coal consumption than four pounds per H.P. hour, the figures are to be modified proportionately, dividing for those below and multiplying for those above.

Hollow Ware Dies.

E. W. Knapp's article on hollow ware dies in your March 2 issue appeals to me as the best and most practical treatise on this subject I have ever seen—possibly because it agrees with my own ideas and practice in designing dies.

Mr. Knapp says "Every available ounce of metal that can be taken away from the bridges, studs and cores of a die, means increased capacity and less power required."

With many clays it is perfectly feasible to carry out this "relieving" idea still further than is shown in the illustrations which accompany the article in question. So long as the stem supporting the core is rigidly connected to the bridge, so it cannot easily be sprung, the stem

may be comparatively slim, and the core nothing but a block or flat plate, as shown in elevation, in Fig. 1. Fig. 2 is a plan view of the bridge and core.

The bridge here shown is of cast steel, is light, rigid,

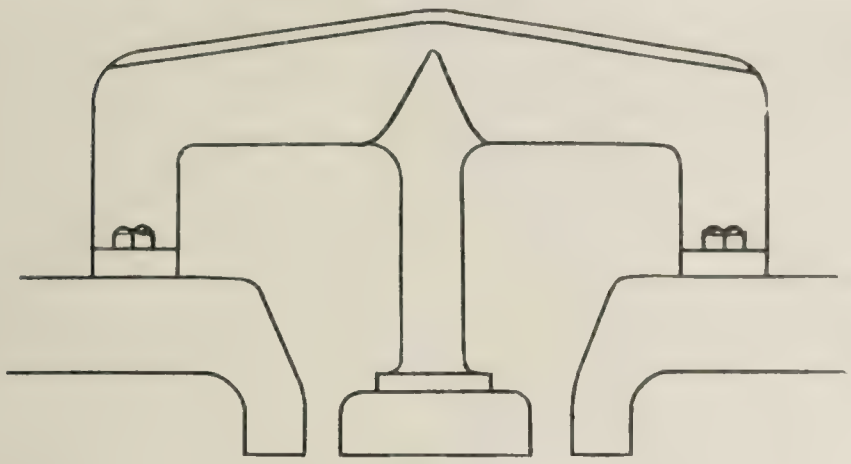


Fig. 1

offers very little resistance to the clay flow, and reduces the cost of machine work wherever it can be used.

The thin stem and flat core will work faster in any kind of clay than the long tapered stem shown in Fig. 3. The product, however, is less dense than if made with the die shown in Fig. 3. For this reason some clays require long tapered dies and cores. It is impossible to say off hand which is the best design of die for any given clay. This can only be determined by experiment. The previous experience of the designer is his best guide.

In getting out a complete equipment of dies for any particular clay, my usual practice is, after experimenting to determine the amount of taper, to start with one of the simplest forms, say a 5″ x 8″ block die. From this much can be learned as to the behavior of the machine and the clay, which will all be of assistance in designing the larger, more complicated and expensive dies.

I have taken apparently satisfactory dies and by changing the style of bridges, and relieving the friction, increased the capacity twenty per cent.

With inexpert hollow ware mechanics, the favorite

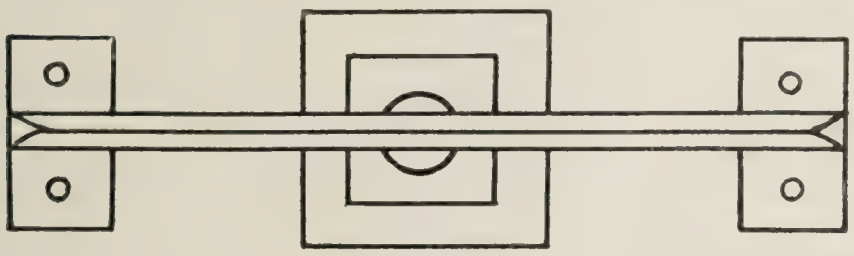


Fig. 2

remedy for die troubles is to "choke" the die. If the column flows faster at the top than it does at the bottom, they "choke" the top by placing obstructions behind the bridges until the speed at the top conforms to that at the bottom. This makes a good bar of clay, but reduces capacity.

Imagine a team of three horses, one of which is somewhat lame and cannot keep pace with the others. Would anybody think of hobbling the sound horses? If the stream of clay at one part of the die has a tendency to lag behind, the friction at this point should be reduced by removing metal, whenever this is practical. "Choking" should only be a last resort, after the relieving process has been carried to the limit. By this means a die with the highest efficiency is obtained.

New dies improve in quantity and quality of ware turned out after having been run for a day or two. This is due to the scouring action of the clay, those portions of the internal parts of the die which cause any undue friction being naturally the first to wear down. This "breaking in" period can be considerably shortened by mixing some sharp sand with the clay and feeding it back into the pug mill for a half hour or so.

When making a new die, it usually pays to face off the back of the die plate on the lathe or planer. Besides giving a better bearing for the bridge supports, this enables the machinists to do a better job of measuring, laying out and assembling the die, resulting in work which is true and rigid.

The object of this fine machine work and close fitting is not that a pretty die may be had, but that the cores will be exactly in the right place, and will stay there. The cores should be flush with the face of the die, or sometimes one-sixty-fourth of an inch "in." Certainly they should never project beyond the die face. Only first class machine work can guarantee these conditions.

The least looseness at the bridge, or springiness of a

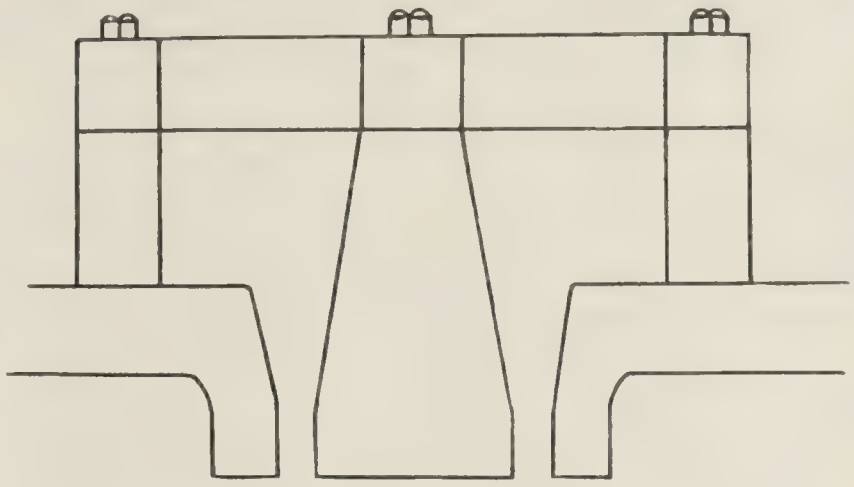


Fig. 3

core stem, can cause considerable trouble, which might continue a long time before being correctly located.

Even with good auger machines, a column of hollow ware issues from the die with a series of distinct impulses. A weak bridge or core stem will allow the core to spring from side to side with the pulsations of the clay. The amount of this movement may be only one-sixty-fourth inch, but may cause a crack in the side of the column, which will appear with exasperating regularity say every ten inches. Minute variations in the temper or character of the clay might stop the cracking, but only to reappear in fifteen or twenty minutes.

With some clays, it makes no difference what kind of a bridge is used, the clay after having been split by it will reunite perfectly. With other clays, however, it is very different. I remember in particular a clay I was handling a few years ago. This material worked very nicely in every other respect, but would not make hollow ware without "bridge cracks." Various ideas had been tried to rough up the clay

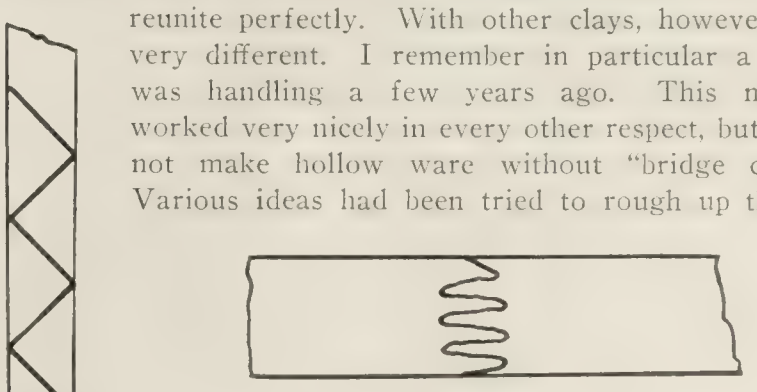


Fig. 4

and make it knit together. One of the core bridges had been roughened by driving quarter-inch round steel pins into drilled holes in the bridge, leaving the pins projecting *a la* porcupine. Another and unusual scheme tried at the same plant was a hollow bridge supplied with water under pressure. Small perforations on the front edge of the bridge sprinkled water on the clay surfaces to facilitate the welding process, but

the difficulties experienced with this clay were finally remedied by the use of a knife shaped bridge buffed to a polish like nickel, with plenty of clearance around the core stem to allow room for the clay to reunite.

To illustrate the theory which dictated the use of a polished bridge, take two side-cut brick fresh from the cutting table. Slap two of the rough sides together, they do not adhere very strongly. Now do the same with two of the smooth faces, and they will usually stick, because the clay surfaces come into more intimate contact with no air between.

If I am doubtful about the reuniting qualities of a clay, I make my core bridges corrugated on the edge, as illustrated by Mr. Knapp on page 460, March 2 issue, not, however, with the idea of "roughing" the clay, but to give a longer line of contact to the surfaces which it is desired to weld.

Take a freshly made tile which has passed over a corrugated bridge, and pull it carefully apart along the line of the weld, and it will be seen that the union of the clay at this point instead of being a "butt" joint, is interlocked, as indicated in Fig. 4. The results in securing a perfect bond will vary somewhat with different clays, as no two clays will be found to be exactly alike in their physical properties and their ability to knit together after being separated.—B. Copping.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes s hould be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

THE MOST IMPORTANT matter taken up by the Interstate Commerce Commission since our last issue, and one of the most important to shippers taken up this year, was the hearing held in Washington, D. C., on April 10, on the Cummins amendment to the railroad rate act. The hearing was called by the commissioners to see how the shippers and carriers viewed the amendment. It is said here that the commissioners themselves are not entirely clear as to the effects of the amendment, which becomes a law on June 3, and it was their idea that something might develop at the hearing upon which an adjustment could be made by the commission, the shippers and the railroads.

Modification of the present form of bills-of-lading and rate increases in certain instances were advocated by representatives of the railroads, while the various traffic associations asked for a six months' test under present conditions.

The roads held at the hearing that when the Cummins amendment prohibiting limitation of liability becomes effective they may automatically increase their freight rates ten per cent. This contention was not accepted by the traffic associations, which declared that the intent merely was to increase the liability of the roads, and not to bring about any increases in freight rates. Under present bills-of-lading, with limited liability, the carriers undertake the transportation of freight at the rates now in effect. Their tariffs, however, provide that where the shipper demands full liability there shall be an automatic increase of ten per cent.

"The Cummins amendment should be so construed by the commissioners that carriers might eliminate from their present bills of lading the clause fixing liability for damage to the 'invoice price' of the shipments, but retaining the clause giving value 'at the place and time of shipment,' as the basis for damage claims," said O. E. Butterfield, representing various carriers of official classification territory. If this view be taken and action in accord with the same before June 3, the roads which he represented, Mr. Butterfield said, would not then expect any general freight rate increase.

H. G. Wilson, president of the National Industrial Traffic League, suggested that the roads find out first if heavy payments resulted from their increased liability and to then demand increases on the rates for that particular kind of traffic.

Among some of the others speaking at the conference were: R. B. Scott, representing roads in Western territory; Lincoln Green, general traffic manager of the Southern Railway; Luther M. Walter, the Chicago lawyer; C. L. Hillyer, representing shippers of live stock; W. H. Chandler, and several others.

Commissioner Clark, who presided at the conference, after a discussion lasting all day, adjourned it, giving all the parties permission to file briefs with the commission before April 20.

The commission has recently handed down an opinion in the case of the Oconee Brick & Tile Company, of Milledgeville, Ga., No. 6453, against the Seaboard Air Line Railway Company. In their syllabus in the case they say:

"Through rates on hollow fireproofing from Milledgeville, Ga., to Tampa and Orlando, Fla., in effect prior to

(*Continued on page* 804.)

Some Cobalt—Uranium Colors

Wherein is Shown That Cobalt Blue May be Blended With Uranium Yellow and Produce Green Glazes and Frits

By Barney S. Radcliffe, A. B.*

There are four coloring oxides, namely, copper, chromium, nickel and iron, which under proper conditions produce green colors in bodies and glazes. In physical mixtures, we are able to produce greens by blending blue and yellow.

The object of this investigation was to determine whether green could be produced by blending cobalt-blue and uranium-yellow.

Series A was made up as follows:

TABLE I—SERIES A

	A_1	A_2	A_3	A_4	A_5
Co_2O_3	1.0	0.9	0.8	0.7	0.6
$Na_2U_2O_7$ 6 H_2O	50.0	50.0	50.0	50.0	50.0
$Al_2(OH)_6$	40.0	40.0	40.0	40.0	40.0
ZnO	25.0	25.0	25.0	25.0	25.0

The stains were thoroughly mixed, calcined to cone 5, ground to pass a 200 mesh screen and added to a mat glaze having the formula,

$$\left.\begin{matrix}0.1\ K_2O\\0.2\ CaO\\0.7\ PbO\end{matrix}\right\}\ 0.36\ Al_2O_3\ 1.36\ SiO_2$$

The glaze was then burned to cone 05. The result was a yellowish green glaze with blue specks. This was due to the fact that the cobalt was not thoroughly disseminated.

A blue stain

Co_2O_3	10
Calc. Al_2O_3	45
ZnO	45

was then made, calcined to cone 7, and ground to pass a 200 mesh screen.

Three frits were made using the mat glaze as before.

TABLE II—SERIES B

	B_1	B_2	B_3
Feldspar	17.6	17.6	17.6
$CaCO_3$	6.3	6.3	6.3
Red lead	50.5	50.5	50.5
Eng. china clay	11.0	11.0	11.0
Tenn. ball clay	10.0	10.0	10.0
Flint	4.6	4.6	4.6
Blue stain	10.0	10.0	10.0
$Na_2U_2O_7$ 6 H_2O	25.0	35.0	45.0

When applied as glazes, B_1 gave an olive green, B_2 and B_3 rich chocolate browns. These results indicate that the ratio of uranium to cobalt is too high.

The next step tried was to use the nitrate of cobalt and uranium, by fritting in the mat glaze.

TABLE III—SERIES C

	C_1	C_2	C_3
Feldspar	17.6	17.6	17.6
$CaCO_3$	6.3	6.3	6.3
Red lead	50.5	50.5	50.5
Eng. china clay	11.0	11.0	11.0
Tenn. ball clay	10.0	10.0	10.0
Flint	4.6	4.6	4.6
Cobalt nitrate	3.5	3.5	3.5
Uranium nitrate	10.0	12.0	15.0

The frits were ground, and a series of glazes made by blending with the original mat glaze.

Bright glazes were made by adding 20 parts of flint to the frits of this series.

The mat glazes were olive green, C_1 having a bluish shade.

Of the bright glazes C_3 was deep green in color, and C_1 and C_2 were green with a bluish shade.

Conclusions: Green glazes and mats can be made by blending cobalt and uranium in the right proportions, which is between four and five parts of uranium nitrate to one part of cobalt nitrate.

*Reprinted by permission from Bulletin No. 22 of the University of Illinois.

Pan-American Road Congress September 13

At a meeting of the Executive Committee of the Pan American Road Congress, held in New York, N. Y., April 16, it was definitely decided to hold the Congress at Oakland, Cal., during the week of September 13. This date was fixed upon, owing to the advantageous arrangements that could be made for halls for meeting places, and also because it was felt that this date would enable engineers who would attend the International Engineering Congress to attend the Pan-American Road Congress as well.

Suggestions have been made—and it is believed will be carried out—that there be set aside by the Exposition authorities one day, during the week of the Congress, to be known as Pan-American Road Congress Day.

It is expected that this Congress will bring together those interested in highway improvement—not only from all parts of the United States and Canada, but also from the South American countries—all of which will be invited officially to participate in this Congress.

The Pan-American Road Congress will be held under the joint auspices of the American Road Builders' Association and the American Highway Association. The plans will be made and carried out by an Executive Committee of five, of which Governor Charles W. Gates of Vermont, is Chairman, the other four members of the Committee being as follows: James H. MacDonald, former State Highway Commissioner of Connecticut; Major W. W. Crosby, former State Highway Engineer of Maryland; J. E. Pennypacker, chief, Division of Economics, U. S. Office of Public Roads, and E. L. Powers, editor of "Good Roads."

Buy the "Ladies Home Journal" for May

The first fruits of the publicity work done by the Panama-Pacific Clay Products Association are shown in the May issue of the "Ladies' Home Journal," which goes on sale as this issue of "Brick and Clay Record" goes to press.

In this, the most widely read of all periodicals that cater to women, the model residence that has been erected on the Exposition grounds at San Francisco, is properly featured. The architectural department of the Curtis Publishing Company has recognized the dignity of the design and the general excellence of the plan.

Buy the "Ladies' Home Journal" for May and see, in it, a sample of what can be done in the way of publicity for brick. It answers every doubt as to the wisdom of the project.

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Blasting Galesburg Shale*

Operation in the shale pits of our larger brick plants is necessarily attended by high costs, and consequently every reduction in expenditure that does not curtail efficiency, is to be welcomed. If the costs can be reduced and efficiency increased at the same time, it is a matter of comment and of real value to all.

The method used in blasting and winning shale at the plant of the Purington Paving Brick Co., Galesburg, Ill., is described in the following article:

The deposit is a hard, blue, high-grade shale, which runs about 65 to 70 per cent silica. This shale shrinks materially when burned to the point of vitrification. The shrinkage is one inch in eight inches, and this quality, though indispensable, demands extreme care and experience to obtain the best results.

The shale was formerly handled on two levels by two shovels. The shovel on top dug the shale and dropped same over the bank into the pit. The shovel in the bottom picked up the loose material and, in addition, dug the shale from the bank, which was all loaded into cars.

Under the present economical methods the entire bank to the full height is blasted in one shot, and the shattered shale is all loaded from the bottom of the pit. The bank, which is about 52 ft. in height, is now higher than when formerly handled on two ledges. The present method of blasting and handling the shale from the natural bed mixes the material much better, with a resultant uniform quality in the brick.

DRILLING

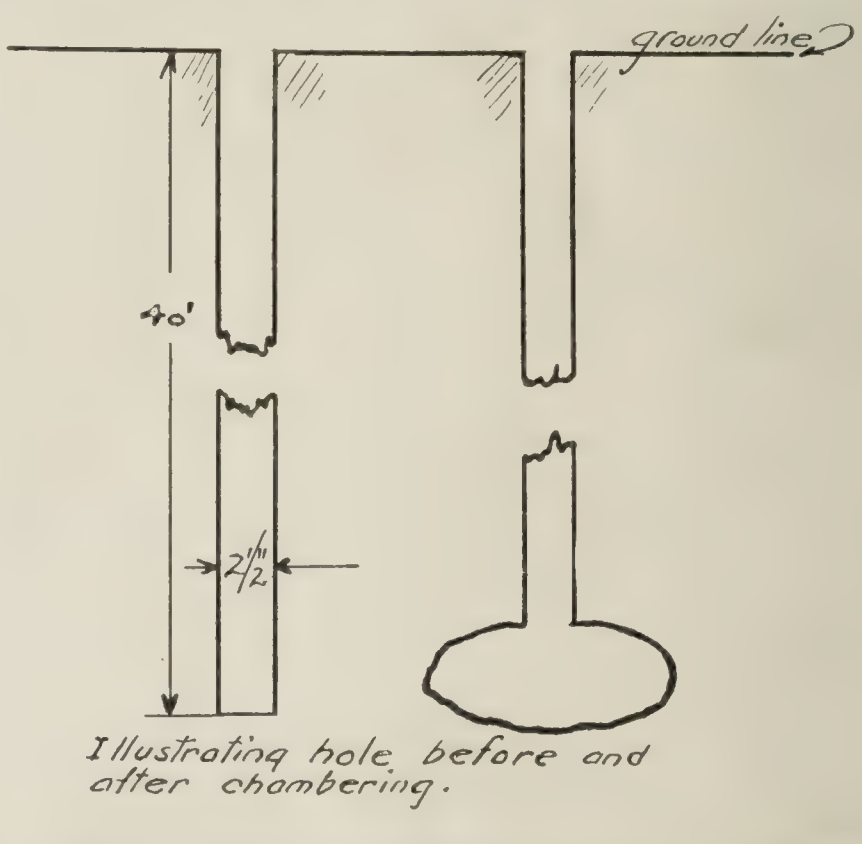
A Cyclone gasoline traction machine with a steel bit of 2½-in. diameter, is used for drilling. About 90 ft. of 2½-in. hole is drilled per day of eight hours. The holes are about 20 ft. back from the top of the vertical face of the shale and spaced about 20 ft. apart, parallel to the face. The holes are first started with a soil auger and drilled about 3 ft. deep, and then cased. This casing will maintain the hole at the surface and also act as a guide for the drill bit. The holes are drilled to a total depth of about 40 ft.

EXPLOSIVE CHARGE

After the holes are drilled, they are sprung or chambered (see sketch) with fifteen 1¾x8 in. cartridges of Red Cross 40 per cent strength extra grade dynamite and fired with one Du Pont No. 6 blasting cap and Climax Crescent fuse. The pockets in each hole are generally of a uniform size and will hold eight kegs of Du Pont "R. R." blasting powder, which quantity is loaded into each hole. The charge of blasting powder in each hole is primed or fired by the use of 1½x8-in. cartridge of Red Cross 40 per cent strength extra grade dynamite with one Du Pont No. 6 electric blasting cap with 40-ft. wires About eight holes are connected in a series and fired at one time.

The result of the shot is to throw the shale from the bottom, up and out, and permit the top to fall, and to leave all in repose on a slope of one to one, or at an angle of about 45 deg. This leaves the material in position to be handled quickly and economically by the shovels. The shale bank is shot off evenly from hole to hole and leaves a succeeding vertical face.

The present output of the pit is about 2,000 tons of shale per day. This method of blasting and handling the face to its full height as against the former method of working on two levels has effected a saving of about $300 per month.



Illustrating hole before and after chambering.

EQUIPMENT.

One Marion 90-ton steam shovel is used on the top for stripping the earth, this overburden being about 10 to 12 ft. thick. Two 105-ton Marion shovels are used for digging the shale. One shovel is always in operation and as it digs its way along the face, the blasting which has been formerly finished for the entire length of the face is continued back of this active shovel. The second shovel is started on the face after the first shovel has finished its trip. While the second shovel is digging, the first shovel is backed into position and is held in reserve to start as soon as the other shovel has dug through.

The shovels are equipped with three yard dippers. The equipment to handle the shale from the pit to the plants consists of two Davenport locomotives handling trains of eight three-cubic-yard cars capacity each. There are also two Davenport locomotives with same size trains for handling the stripping. All locomotives have cylinders of 10x15 in., and all locomotives and cars are equipped with automatic couplers.

Ed. Elson, who for 15 years has made his headquarters at Hotel Grunewald, New Orleans, La., representing Walter A. Zelnicker Supply Co., Universal Iron & Supply Co., and Zelnicker Crayon Works, is now in the Chicago market and is located at Hotel Morrison.

*By E. T. Lednum of E. I. Du Pont de Nemours Powder Co.

National Dry Kiln

To successfully dry all classes of clay wares it is necessary to adapt the heat and circulation of air to that particular clay that is to be dried.

The ability of the clay to dry safely and quickly depends almost entirely on the construction of the dryer, granted that the brick are correctly formed.

The National dry kiln has the elasticity necessary to fit it to any clay. The temperature can be so controlled that the ware is made to absorb heat only when it can safely do so, and when that safety point is reached at which it is possible to go ahead, the drier is so constructed that the necessary high heat can be delivered.

The circulation is just as important, and this point also is absolutely controlled. The air passing through the tunnel must serve a double purpose, in carrying heat to drying ware, and carrying moisture away.

To regulate this air flow so that the humidity is sufficiently high in the cold end of drier, and still able to carry moisture out of stack without ruinous deposition on the ware has been the successful aim of the National Dry Kiln Co.

The heating system is scientifically arranged to deliver correct heat, and the circulation is controlled to take full care of evaporation, and these points are arranged differently to suit conditions on all driers sold.

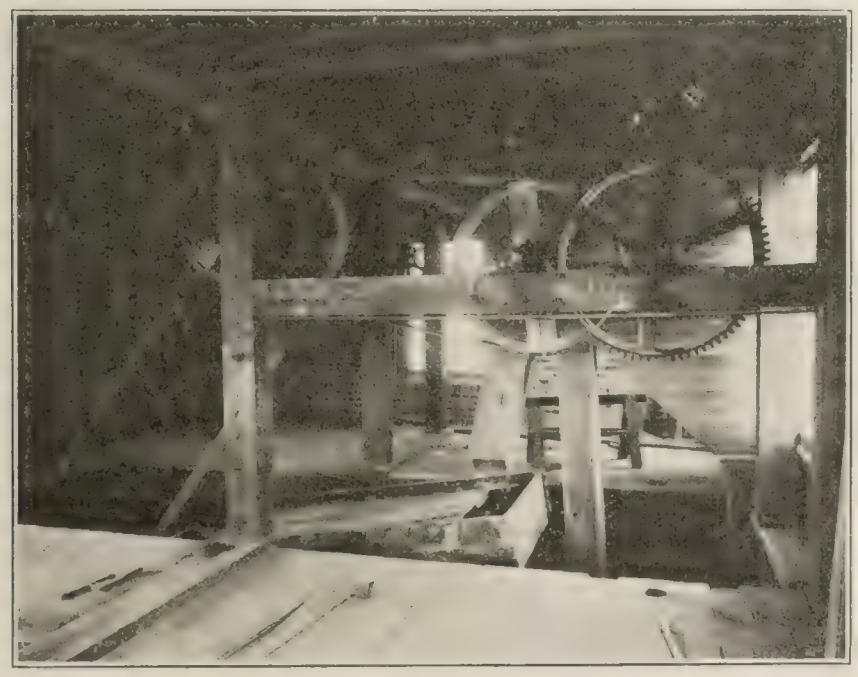
The next important point is economy of operation, and in this the National kiln excels by using *exhaust* steam during the day and live steam at night.

Dozens of successful plants are using this drier. Send for a list, and information on drying from the National Dry Kiln Co., Indianapolis, Ind.

Equipment for Terra Cotta and Brick Factories

A. L. Schultz & Son of 1675 Elston Ave., Chicago, have just completed the installation of a new plant for the Building Products Co., at Bernice, Ill.

This plant, making its first run on Monday, April 5th, for one-half day, succeeded in turning out just 100,000 stiff mud brick. Although the rated capacity of the plant



Elevator Head and Shaking Screen at Advance Terra Cotta Co.'s Plant, Chicago Heights.

is 300,000 to 350,000 brick per day, it surely speaks well for the workmanship and thoroughness of A. L. Schultz & Son that the factory could turn out 100,000 on its first one-half day.

The Schultz company furnished and installed one hoisting drum, granulators and pug mill, rolls, conveyors, turntables, dryer cars, transfer cars, shafting, pulleys, hangers, couplings, and small engines, etc.

Another concern served by A. L. Schultz & Son Co. is the Advance Terra Cotta Co., at Chicago Heights, Ill. This plant is one of the most modern high fire terra cotta plants in the west, and has a capacity of 80 tons of architectural terra cotta per day.

The Schultz company furnished screens, bucket ele-



Exterior of Advance Terra Cotta Co.'s Plant. Equipment furnished by A. L. Schultz & Son.

vators, a proportioning device (by which an accurate percentage of clay, grog and barium carbonate is obtained), two open pug mills, and one compression pug mill. From this last mill the clay is given to the moulders for forming and shaping.

This proportioning device is a new machine brought out by this concern, and is installed already in both the Advance and Midland Terra Cotta Works of Chicago. A further description of this machine will be given in a subsequent issue of "Brick and Clay Record."

The equipment insures an evenly mixed, well pugged mixture, so necessary in any high grade product.

The diversity of machines noted in these two different class plants does not sum up the Schultz company's entire list of machines, but indicates their ability to serve almost any need of the clayworker. Engineering experience and years of clayworking experience fit them to serve all needs as outlined above on two widely diversified plants.

The Schultz company install complete plants, or units in same, and are equipped to do foundry work and all kinds of repairing.

Steam vs. Horse Power*

Numerous requests during the last six months have come in to the office of "Brick and Clay Record" regarding the economy and work to be accomplished by the locomotive on all classes of clay plants.

In practically every case the questioner has had in mind the first and second cost of small industrial locomotives, and with regard to cost, has had a tendency towards unfavorable comparison with the time honored horse and wagon. The idea is also prevalent that a locomotive can not be economically adapted to the needs of the medium sized plant; it being the impression that only the large plants could afford to buy, maintain and efficiently use this power method of haulage.

To answer this question and correct a possible erroneous impression, the Service Department of "Brick and

*By C. O. Arbogust in service department of "Brick and Clay Record."

H. M. DEAVITT, *Ceramic Chemist*
209 South LaSalle Street, Chicago
Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

The DEWEY 5-Ton Locomotive
It never balks on heavy loads or grades
Why not let the Dewey do *your* work?
DEWEY BROS., Inc., Goldsboro, N. C.

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.

Sturtevant
BRICK DRYING SYSTEMS
increase output and decrease expenses. Write for bulletin 202-S.
B. F. STURTEVANT COMPANY
Hyde Park, Boston, Massachusetts, and all principal cities of the world

Our business is diagnosing and remedying
TROUBLES
of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult
H. & B. COPPING, Kankakee, Illinois
We personally do the work.

DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

Clay Record" sent blank forms (as illustrated) to a series of manufacturers and users of the small type of industrial locomotive.

The blanks were returned, filled out, from every section of the country except the far west; and from this data it was deemed advisable to strike an average. This average is given in the table, and although the separate items varied in all reports, it is remarkable that the totals show a striking similarity to the individual units that were used to make up the average table.

It must be borne in mind that the table is tabulated from data submitted from widely separated sections: it is the resultant of a series and is valuable chiefly because of this fact.

COMPARATIVE COSTS

Two Teams.		per da.	per da.	per yr.	per yr.
First cost at $792.30 (360 da.)	P		$0.13		$ 47.54
Feed and stabling (365 da.)	U		.83		667.95
Drivers (300 days)	T		4.00		1,200.00
Incidental expense, shoes, etc. (300 da.)	Y		.39		117.00
Depreciation (360 da.)	O		.60		216.00
	U				
Totals	R		$6.95		$2,248.49
One Locomotive.	D				
First cost at $2,086.66 (360 da.)	A		$0.35		$ 125.19
Coal, ½ ton (300 da.)	T		1.50		450.00
Engineer (300 da.)	A		2.50		750.00
Supplies (300 da.)			.31⅔		94.98
Depreciation (360 da.)	H		.62⅓		224.38
Maintenance (300 da.)	E		.52⅔		157.98
	R				
Totals	E		$5.81⅔		$1,802.53

Items figured on basis of 300 days may vary according to conditions.
Locomotives studied, range in first cost from $2,500.00 to $1,200.00.

It seems to indicate fairly the comparative costs and upkeep, and insofar as it goes, the "steel and iron" horse is judged winner on points.

It costs $6.95 to produce, support and use two teams, and it costs $5.81⅔ to produce, support and use one small locomotive, for one day; but even with a *conservative* estimate, the one locomotive *will do the work of ten teams.*

This then seems to be the "punch." The initial cost and upkeep on one locomotive that can do the work of ten teams, is approximately one-fifth of the total amount of money to be expended in using these ten teams.

In round numbers let us assume that the ten teams cost $30.00 per day, assume that one small type locomotive costs $6.00 per day, leaving a balance or saving of $24.00 in favor of the locomotive. This amount ($24.00) will go a long way towards providing for rails, switches, grading, etc, for it is generally admitted that a railroad has a higher first cost than a wagon-road. This again depends on local conditions entirely.

The table does not include the cost of the following supplementary equipment, viz., wagons or dump cars, team road or track, auxiliary labor for each. These points are undoubtedly very important and must bear equal weight with horse and locomotive in any consideration given, towards probable installation. They have not been discussed here because they are such variable factors. This is an added problem for each individual investigator to determine for himself according to existing conditions on the plant under discussion.

The problems may be solved in more or less accurate fashion by fitting the new accumulated data into tables similar to the one given.

There is no doubt that many of our plants now using man and horse power methods could reduce manufacturing costs, to that point that spells profit, by installing this modern method of haulage.

The locomotive also brings the far distant pit or mine within the area of economic working.

Boost for Brick Paving

If all the people connected with the clayworking and kindred lines of machinery would do their part in boosting for brick (brick roads in this instance) the day of complete victory for burned clay products would arrive that much earlier. The following letter from the American Clay Machinery Co. has just been received, and we reproduce it here because it shows so clearly what can be done in this way with a little effort:



Road Paved with Brick as Result of Efforts Put Forth by The American Clay Machinery Company.

"We are enclosing you photograph (see illustration) of a brick country road just out of Bucyrus. This is the first of about eight miles of brick roads which we have succeeded in getting our Commissioners to build. Contracts have already been let for seven miles and other contracts will be let shortly for about six miles more. This comes as a direct result of the American Clay Machinery Co. interesting itself in the road problem of this county. Our first step was to take our County Commissioners to Cuyahoga County and show them the good brick roads in that county. We are mentioning this so that you may see the possibilities open for paving brick if their promotion is gone about in the right way and vigorously pushed."

A second photograph was enclosed, showing Secretary R. O. Perrott, Sales Manager Sharer and Mr. F. L. Hopley caught in the very act of putting up "Pave with Brick" signs. As Mr. Hopley states: "We went out to put up signs boosting Brick Paving, and have seen to it that this work has been properly done."

Install Two Lawson Tramways

The Sioux City Brick & Tile Co. of Sioux City, Iowa, has contracted with the Ambursen Co., 61 Broadway, New York, for two tramways, respectively, 500 ft. and 2,000 ft. in length. The shorter tramway is to clear away an overburden of soil, and its capacity is 1,000 cubic yards per day. The longer tramway is for transporting sand from the pit when uncovered, to the railroad siding, and its capacity is 500 cubic yards per day. Both tramways will be driven by electric motors.

Several new adaptations are introduced into these tramways such as movable loaders, drop-bottom dumping cars, variable angles, etc.—the conditions of loading and discharging being very unusual and severe.

The Murray Iron Works Co., Burlington, Iowa, furnished four return tubular boilers and one 500-h.p. rolling mill type of Corliss engine to the Building Products Co., of Bernice, Ill.

Increased Efficiency *Greater Economy*

Results obtained from use of

"Fuller Quality"

Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.

Write for Fuller Quality Products Catalog No. 50-A

Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways
Yellow Strand Wire Rope
Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.



Pyrometer Advice

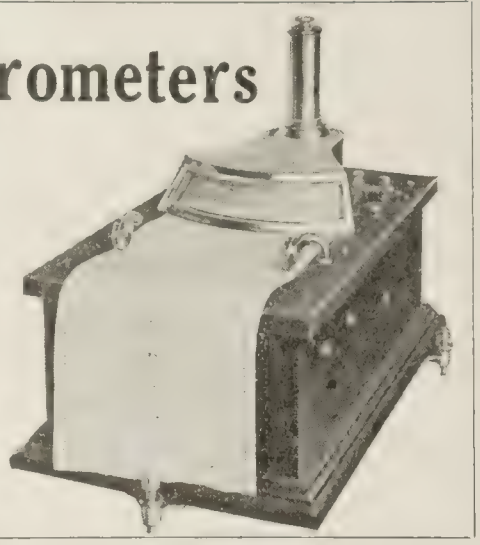
Use an accurate Pyrometer or burn by the old method. Insist on the accurate pyrometer's adaptation to your needs.
Result—Decreased manufacturing cost. Material improvement in product. Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa. 8

"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
BUCKEYE
Offices: Steubenville, Ohio
MEANS
BEST
All Sections from 12 lb. to 40 lb. per yard
BEST
Mills: Newark, Ohio
MEANS
Write or wire us, when in need.
BUCKEYE
No order too large to handle promptly or too small to secure immediate attention.

Efficient Pyrometers

Have you an accurate record at all times of the heat in your kilns, permitting you to control the burn and assuring you perfect and uniform ware? The Price Pyrometer will do this for you. Let us tell you about its advantages.



The Price Electric Co.
12367 Euclid Avenue
Cleveland, Ohio

Cutting WIRES Screen

Tough Twisted—Wrapped Strong

ANY Size or Length IN Coils or Looped

We sent YOU a letter on the front cover of the March 16th issue of this journal. Did you read it?

Specialty Wire Co.
2009-21 Clybourn Ave. Chicago

CARS

Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS CARS CARS

Let Us Plan a Trip for You to the
California Expositions

Printed matter free for the asking. For information regarding rates, train service and description of various scenic routes address C. A. Cairns, G. P. & T. A., C. & N. W. Ry., 226 W. Jackson St., Chicago

Stevenson's New Tile Press

The Stevenson Company, Wellsville, Ohio, located in the heart of the clayworking industry, has brought out a new steam sewer pipe press that is guaranteed to make pipe from 3 inches up to 36 inches, and more large pipe than any other press on the market. Recent records prove this and this company will gladly refer inquirers to different manufacturers who have this press in operation alongside other popular makes.

Both the top and bottom heads of this press, as well as the steam cylinder, are extra heavy and made to stand a great steam pressure. The steam connections are directly through top and bottom head, thus giving it direct force for a 4-inch rotary valve. The mud cylinder is bored and bushed and this bushing can be removed and replaced with new bushing without disturbing any other part of the press.

Every manufacturer of clay products who may be interested in the making of tile should get the Stevenson Company's catalog and note the photograph and full description of this new press.

We might add that a steel frame is furnished with the press, so constructed that pipe can be delivered on the first, second or third floor.

One of the members of "Brick and Clay Record's" staff recently had the pleasure of visiting the Stevenson Company's plant and found every department running to its fullest capacity; in fact, this has been the situation with this company during the past three or four years. Theirs is the only electrically equipped plant of its kind in the country, well lighted, having new works entirely of steel structure and all of the castings and complete machines are handled by traveling cranes. Each machine is motor driven, which makes for the very lowest cost of manufacture of the finished product which the Stevenson Company turns out.

We are sure that their reputation is so well known that it is hardly necessary to add that their machinery is recognized as the very best in material and workmanship obtainable.

One 50-ton steam shovel was sold by the Marion Steam Shovel Co., of Marion, Ohio, to the Building Products Co., Bernice, Ill.

General Porcelain Works Greatly Enlarging Capacity

F. W. Milligan is the new general manager of the General Porcelain Works, at Parkersburg, W. Va. A twelve-kiln plant has been built with a capacity, it is said, of $600,000 worth of porcelain a year. Another nine-kiln plant will be built at Parkersburg, which is to cost $100,000. Gas is to be used for fuel as it can be obtained for ten cents per thousand feet, which is about one-half of the fuel cost at East Liverpool or Trenton. The class of goods made by this company is for the main part for use in connection with electric fixtures, a brown being for high potential and white for standard work. The latter represents about eighty-five per cent of the output. Nothing but domestic clay is being used at the present time.

Ships Roofing Tile to Porto Rico

The U. S. Roofing Tile Company, at Parkersburg, W. Va., has recently completed an order for its El-Zay-An shale tile which is being used in Porto Rico. D. A. Cable, who was formerly with the Denny-Renton brick plant, at Seattle, Wash., is general superintendent.

Oregon Clayworkers to Advertise

Newly Formed Association Holds First Convention and Makes Plans for Publicity

WITHIN TWO MONTHS after its organization, the Oregon Clayworkers' Association held its first annual convention in the auditorium of the Commercial Club at Salem, Ore., on March 30 and 31.

Although being but the smallest infant in point of time, this association is laying plans, which, when accomplished, will set a new high-mark in the way of achievements to which other similar organizations in the industry should aspire. The officers and members of the association are recognizing, from the very start, that one of the first tasks for them to begin on is a campaign of advertising and education to teach the merits of burned clay to the building public and farmers of Oregon. The standardization of the products of its members and an inquiry into the labor supply, also constitute worthy subjects for the thought and action of the committees appointed for the purpose.

The first session of the annual meeting was opened on Tuesday morning, March 30th, by W. E. Wilson, president of the association. Mr. Wilson made a few remarks, calling attention to the importance of all of the clay products manufacturers of the state working together and in harmony. The report of the secretary was then read, after which a committee was appointed on education, with a view of securing instruction in bricklaying in the manual training schools of the state. A committee consisting of R. O. Hansen, A. Klose and O. K. Edwards was appointed to handle the advertising and publicity plans of the association. Secretary S. Geijsbeek also announced that a meeting would be held looking toward the standardization of the size of brick.

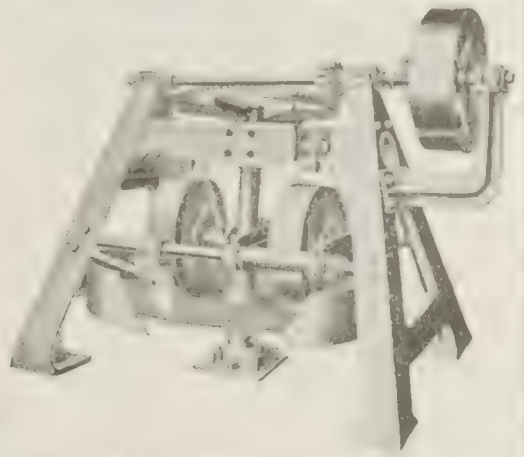
Tuesday afternoon's session was opened with a brief address by Governor Withycombe, who spoke of agriculture as the state's basic industry. He said that there were great possibilities in the development of the clayworking industry in Oregon and the sale of its products for building and the paving of highways. The Governor said that there was an immediate need for drain tile in the rural districts of the state.

P. A. Cupper, assistant state engineer, then explained the provisions of the new drainage law, which includes those for organizing drainage districts, the appointment of an engineer and the issuance of drainage district bonds. Mr. Cupper recommended co-operation between the makers and users of tile in drainage matters.

"Face Brick Manufacturing" was the subject of an interesting paper read by O. K. Edwards, manager of the Pacific Face Brick Company, whose plant is at Willamina. S. Geijsbeek followed with a discussion of "Mechanical and Technical Part of the Clayworking Industry." M. A. Nicol then spoke on "Experience of Others," advocating co-operation, friendly association and the learning from others in the same industry.

Next followed a general discussion of the subject of advertising in which all present joined. The fact was presented that competitive materials have gained the advantage over clay products through effective advertising and publicity methods, and the only way for the industry to regain lost ground, is to employ the same methods as have cement, lumber and

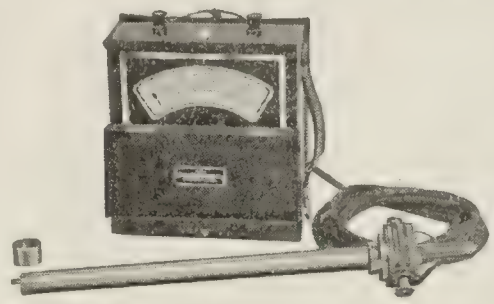
THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES, IOWA

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

Jackson & Church Company
Saginaw, Michigan

PERFORATED METAL SCREENS
As required for BRICK MAKERS USES.



New York Office
Room 1028 Cortlandt Building
Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.

STRENGTH
UNIFORMITY DURABILITY
REG. U.S. PAT. OFF.

Webb Wire Wears Well

Our
"Red Label" Piano Wire
is made especially for
Brick and Tile Cutting

All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

Ask for Sample and Prices

THE WEBB WIRE WORKS
New Brunswick, N. J.



Davenport Locomotive Works,
Davenport, Iowa

ZOOK
SILO FRONT

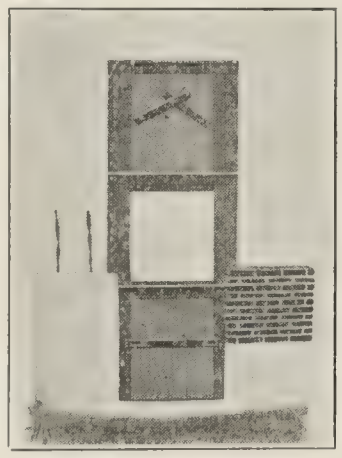
It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

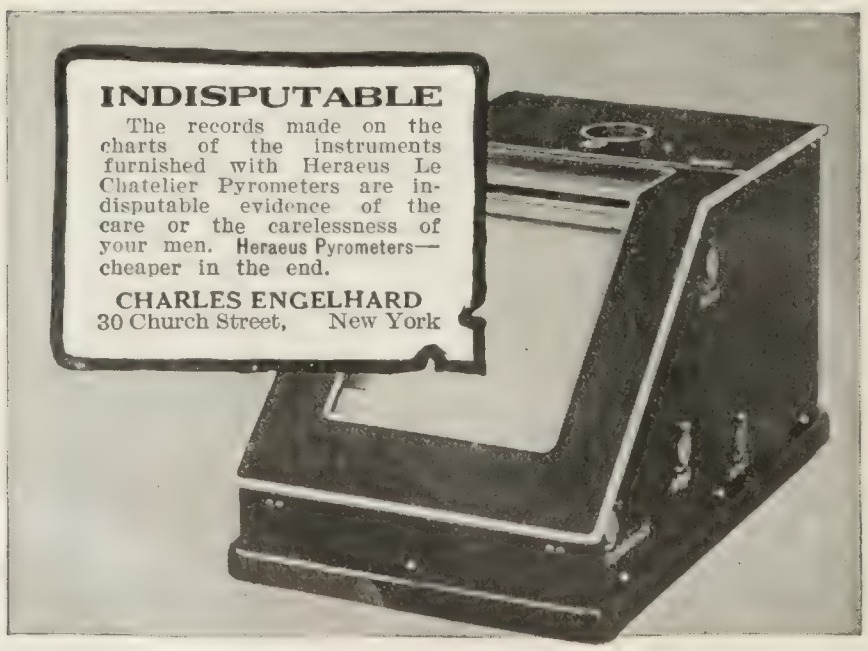
It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.

G. W. ZOOK
BUFFALO KANSAS





metal—that is, by advertising. Every phase of the question was discussed and a plan was outlined to raise an appropriation for advertising purposes by the assessment of from one-half to one per cent on the annual production of each member in the association.

Tuesday evening was given over to the discussion of the proposal to erect, on the state fair grounds a building suitable for the housing of a permanent exhibit of clay products.

Wednesday's session was opened with a paper by P. Withycombe on "History of Drain Tile in Oregon." Mr. Withycombe, who has shared, with his father the credit of pioneering the manufacture of drain tile in Oregon, gave an interesting account of early experiences.

W. E. Field, president and plant manager of Fairmount Brick and Tile Company, Eugene, read a paper on "Common Brick Manufacturing." Prof. Ira A. Williams, Corvallis, was then introduced. He gave an interesting talk on "Oregon Clay Deposits and Their Relative Value." Frank C. Moore, of Denny-Renton Clay and Coal Company, Portland, discussed "The Cost System in the Clayworking Industry" in a manner which greatly interested the other members, and T. S. Mann, of Pacific Stoneware Company, Portland, read a somewhat exhaustive paper on "Pottery Clays," part of which was historical.

The convention ended with a trip by automobile to various plants and institutions in Salem.

The officers of the association are: president, W. E. Wilson, Salem; and secretary, S. Geijsbeek, Portland.

Buy it Now

Every time you "put off until tomorrow" the buying of anything that you need today, you deprive yourself of the earnings of that machine (if it be a machine) or the income from the added efficiency that will follow the installation of the method, the device or equipment that has proved its claim to your better wisdom, but which has not overcome your habit of waiting for something to violently separate you from a part of your bank account.



BUILDING CONSTRUCTION, in March, 1915, was only 2.6 per cent below the figures given for March, 1914, which was normal. This gives the impression that building conditions, having swung to an intense depression, are now swinging into the full bloom of prosperity—this season being, as it were, the central or average point, from which it will go higher and higher.

Incidentally the New York Stock Exchange activities that characterized the closing days of March and the

opening days of April, based apparently upon some intimation not then known to the general public, boded well for the future of the investment and general building financing markets. Administration reports more or less dependable—by reason of the general character of their summaries—at least indicate a change in sentiment.

Various parts of the country reporting for the clay products industry, however, show wide fluctuations regarding the current demand for common- and face-brick, architectural terra-cotta and fireproofing material. Tile manufacturers report more frequent and larger orders from contractors. Brick and general building clay products manufacturers' reports lack uniformity.

Baltimore shows a gain of 37.9 per cent—mostly in inquiries. Cincinnati shows about a 50 per cent gain over February. Milwaukee reports a gain of approximately one-third of the business current in February. Rochester developed a demand about a quarter in excess of that of February; Buffalo, about the same. Detroit, about one-fifth; Indianapolis, about one-eighth; Pittsburgh reports a gain of 5 per cent; Philadelphia 6 per cent while New York shows an actual gain of 253 new buildings over the first quarter of 1914 and a total increase in expenditure of something like $6,250,000.

Chicago reports a decrease in demand of 5.6 in clay products requirements; St. Louis 8 per cent; Cleveland 6 per cent; St. Paul 50 per cent; Los Angeles 48.2; Portland, Ore., 36.4; San Francisco about half the business reported in February. Washington, D. C., drops back about 50 per cent and Minneapolis about one-third. Grand Rapids falls back about 25 per cent. Thirty-six cities are reported to have shown an advance and twenty-one decreases from March of a year ago.

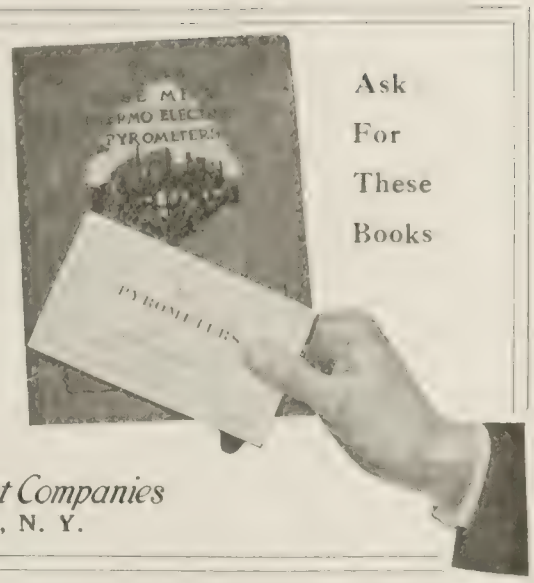
These percentages, based upon reports received by a big New York building material report company, balance fairly well with requirements of other materials. Lumber is next in demand and Portland cement third. At the present time Portland cement is reported to have a larger demand in the East owing to the terrific cuts made in prices since the first of the year. This condition has made itself felt in the Hudson river district where probably not more than 90 out of the 119 plants supplying the New York market will operate this year.

There is reported to be about 300,000,000 of last year's output of common-brick still in the Hudson river sheds. This, coupled with the difficulty prospective builders in the East have had in getting permanent loans and the fact that dealers have been loading up as heavily as they could with cement, has been responsible for the low price ruling in New York of $5.75 for good common Hudson brick. Raritan brick has been bringing $5.75 to $6 on order, but orders have not been as brisk as the rate of building plan filings would seem to have warranted.

The trouble heretofore has been to get money to move in New York. Stocks on the Exchange were slow and buying spiritless. Then in the first weeks in April came a big activity, wherein eleven stocks jumped in one day $75,000,000 in value. When it is considered that of these eleven, six were industrials and five railroad stocks and that the average increase was 4.3 it may at least be assumed that the bottom of the late depression has been reached and that the upturn is now well under way.

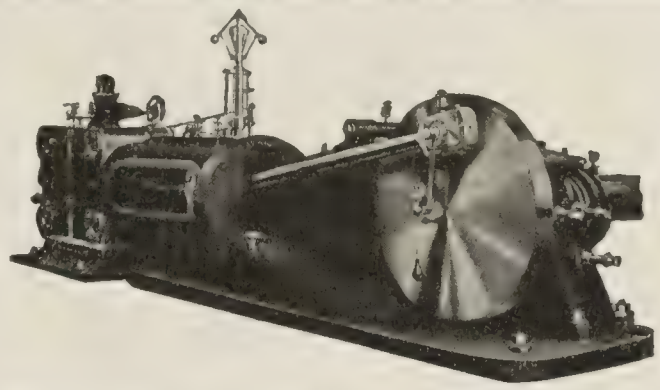
Another sign of improvement in times is the activity of labor unions with reference to wage schedules, etc. These bodies have been rather quiet for almost a year.

Tycos
Pyrometers
PRACTICAL
—
DEPENDABLE
—
GUARANTEED
Taylor-Cambridge Division
Taylor Instrument Companies
ROCHESTER, N. Y.



Ask For These Books

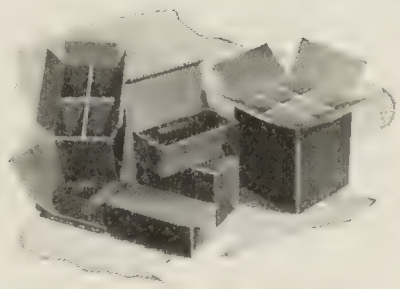
POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

WHY did YOU lose that order?



Samples did not show up well? Yes, just as we thought. You were careless in packing them, and the corners and edges were broken in transit. Your competitor used the Hinde-Dauch Corrugated Container, and his samples arrived in perfect condition.

Try it for yourself next time.

The Hinde & Dauch Paper Co.
Sandusky, Ohio.

Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY
1229 Insurance Exchange Bldg., Chicago

"NUGGET"

Bearing Metal

FITS YOUR LADLES

Guaranteed

MOST *Economical and Efficient*

For

Brick and Clay Working Machinery

Because

Exhaustive research and practical tests have proven that its hardness assures great wear resistance—its high compressive strength enables it to withstand heavy duty. Why don't you let us prove it?

Price, 15 cents per pound, delivered.

Manufactured Solely by

The Cleveland Alloys Co.

Bearing Metal Experts

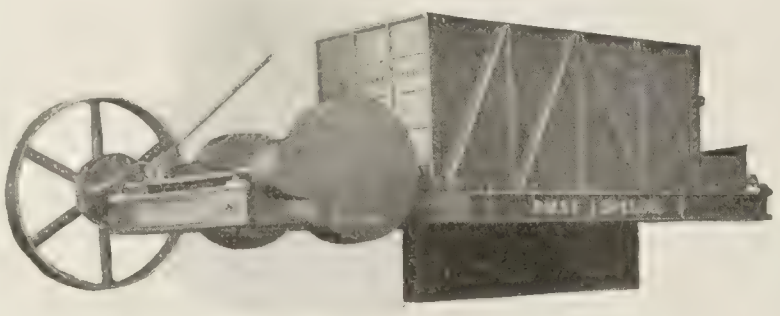
CLEVELAND OHIO

Let the

New "RUST" Special Clay Feeder

Make Money for You

It will cut out the labor of two men and pay for itself in less than one year. It's the very "last word" in clay feeders—the King of them all.



Note These Exclusive Features:

1. No exposed gearing.
2. Extra large, semi-steel gearing.
3. Eight drive-gears housed in oil.
4. Drop bottom hinged at center.
5. Four spiral shafts, extra large-increase capacity.

Ask for Special "RUST" Bulletin

Marion Machine, Foundry & Supply Co.

P. O. Box 395. Marion, Ind.

Now they are beginning to make themselves felt in New England and in Chicago.

There is a problem that seems destined to compel the serious thought of all large employers of alien labor. It has to do with scarcity of cheap labor that will follow the termination of the war, which by some is considered not far off. When man-divested Europe begins to count its cost in human life, it is a question whether the call of home ties and blood will not bring thousands of our alien laborers back to their parent lands to help keep homesteads together and family industries intact.

If only one out of every hundred laborers are called back home, 20,000 men will have been taken from manufacturing industries, and the probabilities are, owing to the clannishness of foreign peoples, that this percentage will be considerably increased and that the casualties will vastly exceed the very conservative estimate of 2,000,000 victims of the war.

"What, therefore, is the American clay products manufacturer to do about cheap labor? The South always has plenty of cheap labor, but the vast steel industries and construction contractors there will require help as well as the brickmaker. The 25,000 men now employed on the New York subways are mostly aliens, despite the alien clause in the New York state labor law, and the 13,000 men employed on the New York aqueduct work can easily be taken care of by the Hudson river and New Jersey brick yards and pottery plants provided they stay here. Subsidized boats and foreign governments intent upon repopulating their countries at the earliest possible moment will make it very attractive for alien laborers to return to the lands that gave them birth.

The extreme West may look for relief from Asiatic labor, but here, in the minds of many, an even greater danger arises. If prosperity is really on its way, factories will soon be taking on skilled and unskilled men.

It seems unwise, therefore, for the manufacturer of burned clay products, to even consider the curtailment of his output. So great a part of his cost of production goes into the payroll that, if the cheaper labor is to be replaced by labor that is higher in price, his cost of production will be accordingly increased.

The demand for burned clay products in building construction is coming in, stronger and stronger each day. Nothing will stop it, now, but depleted stocks or increased prices, due, if you will, to increased cost of manufacture, yet too high, when compared to the cost of competitive materials, as cement and gypsum.

Buy it Now

The money you will spend will start the mills going full time. In the lighted windows and the smoke clouds of their chimneys will be read the return of "good times." Your holding back, on needed purchases, darkens a few windows—lightens a few smoke clouds. And it puts a few days between you and the "good times" coming.

Denny-Renton Manager Retires

Blaine R. Smith, general manager of the Denny-Renton Clay and Coal Company, Seattle, Wash., has resigned his position and will retire from active business. Mr. Smith is an enthusiast for pheasant raising and motoring, and in the future will devote most of his time to these hobbies. He is said to be one of America's leading fanciers of these birds. Mr. Smith was well liked in Northwestern clay circles, and leaves behind him many friends.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

The North Birmingham Fire Brick & Fire Proofing Company is erecting a plant to manufacture clay tile silos.

The Decatur (Ala.) Brick & Tile Company will rebuild its plant which suffered damage by fire sometime since.

Ager and Cline, contractors of Birmingham, Ala., were the successful bidders for the erection of the new brick high school building at Greenville, Miss. The price of the contract is $34,400.

Tuscaloosa (Ala.) citizens are interested in the plans of R. C. Chapman of Montgomery to establish a brick plant in their town. Mr. Chapman has been in conference with Tuscaloosa business men regarding his plans, which have been approved by the local board of trade.

The information has been given out that E. G. Dougherty of Fairhope, Ala., is organizing a company to be capitalized at $100,000 for the purpose of developing large deposits of crucible and tile clay located in the district south of the Ohio and east of the Mississippi rivers.

The plant of the Southern Sewer Pipe Company, North Birmingham, Ala., which was partially destroyed by fire some time ago, will be replaced by one of the most modern clay-working plants in that section of the country, according to W. S. Dickey, president of the company. Mr. Dickey, together with Fred L. Dickey and W. B. Dickey, his sons, recently spent a few days in Birmingham when they went over the site of the proposed new plant together with architects and engineers. No definite plans have been decided on as yet nor has any figure been set as the cost of the new plant, but it is the intention of the company to leave nothing undone to make it modern in every respect.

ARKANSAS

Colonel C. W. Adams is organizing a company in Murfreesboro, Arkansas, to operate a kaolin mine near that city. The capital stock will be $7,500.

Architects Hanker and Cairns, of Memphis, have prepared plans for a two story brick mercantile and office building for J. Bertig, at Paragould, Ark.

CALIFORNIA

The Golden Gate Brick Company, of Fresno, Cal., has been incorporated with a capital of $200,000.

The Board of Supervisors of Siskiyou county, Cal., will call for bids very soon for the sewer system for the town of Etna, for which $21,000 is available.

Eleven bids were received for the sewer pipe for the Calistoga, Cal., system, ranging from $14,248 to $23,771 in price. The lowest bid was that of Bordwell and Zimmerman.

Plans for sanitary sewer extension in Harrison Street, and in other parts of Stockton, Cal., have been accepted

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

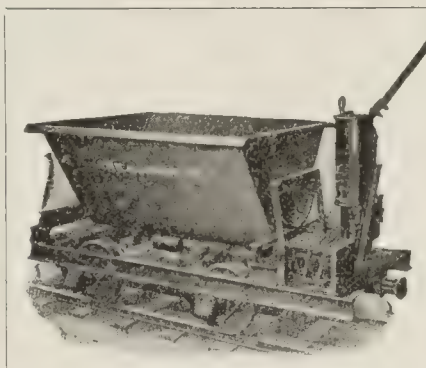
Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O., in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook.s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

Vigo, Ohio

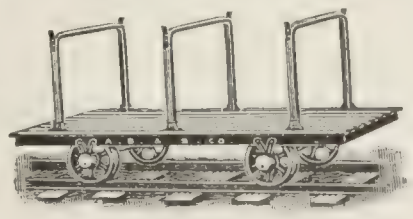
C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***



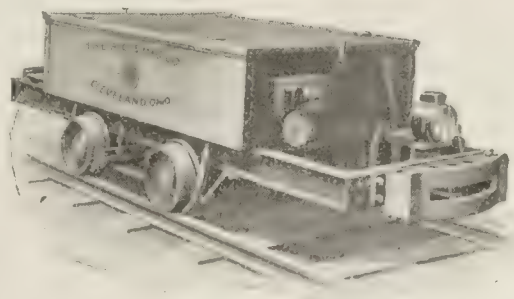
No. 217-E. Side Dump Car Equipped with Motor

ATLAS
High Efficiency Cars and Electric Locomotives

REDUCE YOUR HANDLING COSTS
By the Purchase of Efficient Equipment



No. 126 Double Deck Dryer Car



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.

Dept. I

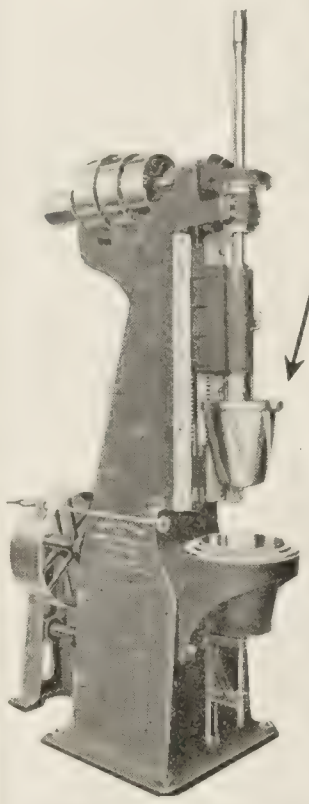
1287 Marquette Road, Cleveland, Ohio



Why Don't You Make Flower Pots?

It's a big field with very little competition, and it makes a profitable side line for any plant making brick or tile products.

Start right by adopting the



Baird

Pottery Molding Machine

Simple in operation, accurate in its work, and from six to ten times as rapid as old methods.

Send us a sample of your clay—we'll show you what our machine will do for you, and send you full information.

Baird Machine & Mfg. Co.

54-56 Jefferson Ave.
Detroit, Mich.

POSTERETTES



160,000 of these stamps have been used by brick-makers throughout the country. As many pieces of mail, and express matter, have carried the "Build with Brick" slogan. It is printed in bright colors and "catches the eye."

How about your using some of them? It is an inexpensive way of advertising your material.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD
445 PLYMOUTH COURT CHICAGO

and a resolution to do the work has been passed by the city council.

Bids have been called for by the city council of Bakersfield, Cal., for two thousand six hundred and fifty-one feet of fourteen-inch vitrified sewer pipe, one thousand nine hundred and twenty-one feet of twelve-inch pipe, and two thousand eighty feet of ten-inch pipe.

The San Francisco city engineer has rendered a report to the Board of Public Works recommending additional appropriations for sewer construction for the next year, amounting to $550,000. Besides this, there is still left in the sewer fund for immediate use $145,000.

The building record for Los Angeles during March shows a total of $1,125,000 in the value of permits issued, more than twice the showing made for the preceding month, but little more than half of that for the month of March, 1914. Brick men believe that the revival in building for March, as compared with the five previous months, indicates that the worst effects of the European war have passed, and that the coming summer will see a slow but steady improvement.

Some of the large work of a public or semi-public nature, which brick men have been looking forward to, is beginning to reach the contracting point. Contracts for the Young Men's Institute Hall have been let during the past week, and bids have been called for on the San Francisco Public Library and Reading Rooms. The contracts on the former building included one for floor and wall tiling amounting to $5,300 which went to Lowry and Daly of San Francisco. The contract for the rough and glazed brick was awarded to Fennell and Wand, for $1,065. The general contract for the Rainier Brewery buildings, amounting to more than half a million dollars, has been let; but no contract for supplying the large amount of brick required has been announced.

While building in San Francisco is not considered very active, it is a noteworthy fact that, during the month of March, building permits issued reached a total of $1,320,000, a sum considerably above that for any previous month in the past five months, and above the average for the past year. Probably the total for the month just closed runs somewhat below similar figures for the month of March, 1914, but owing to a change in practice at the city building department, the records for the first quarter of 1914 are made incomparable by the addition of several millions of dollars worth of work which had been omitted from the record during the preceding year. Of the building work for which permits have been issued during March, a little less than one-half is estimated to call for brick construction.

CONNECTICUT

H. E. Putnam and Mary L. Putnam, both of Hartford, Conn., and Daniel R. Ward, of South Manchester, have formed a new company, to be known as H. E. Putnam, Inc., the object of which is to manufacture and deal in brick, stone, building material, etc. The capital of the company is $50,000.

Joseph Towers, a brick manufacturer of New Britain, Conn., and for many years prominent in town and county affairs, more recently as a member of the board of county commissioners, celebrated with his wife their fiftieth wedding anniversary on March 25th.

DISTRICT OF COLUMBIA

Spring trade is brisk according to the Washington (D. C.) office of the Hydraulic-Press Brick Company. Other brick companies here report business as improving.

Ragland & Hofferbath have established an agency in

the Munsey Building, at Washington, D. C., to handle building material. Face-brick lines as well as ornamental terra cotta and other clay products are desired.

L. Perry West, of the West Brothers Brick Company, Washington, D. C., reports that his company's plant is running full time on common brick and that he has all the business that he can take care of in that line.

The Washington (D. C.) office of the Walker Brick Company, whose plant is located at Relay, Va., a few miles from this city, has been closed up. The plant has not been running for some time and it is understood, although not verified, that the company expects to get out of business.

The West Brothers Brick Company, Washington, D. C., has been awarded the contract to furnish the common brick for the new $750,000 Arlington Memorial Ampitheatre to be erected at the Arlington National Cemetery. It is estimated that about 2,000,000 brick will be needed for this work. George A. Fuller Company are the general contractors. Work has been started on the structure, which it is expected, it will take two years to complete.

FLORIDA

The Dowling-Shands Lumber Company, of Green Car Springs, Fla., wants to represent manufacturers of glazed tile.

The Composite Brick Company, of Jacksonville, Fla., will increase the capacity of its plant. E. R. Hood is manager.

J. W. Barnett, manager of the Planter's Trading Company, of Warsaw, Fla., is reported as being interested in a brick plant which will be built sometime this spring.

GEORGIA

The Georgia Brick Company has started operations at its plant at Adairsville, Ga.

Dr. A. Fleming, chairman of the board of commissioners of Ware county, Ga., is advocating the establishing by the county of a brick plant. He states that a number of suitable clay deposits are present in that locality, and takes the position that by manufacturing its own brick for road work, the county will save much.

ILLINOIS

The Gillette Brick and Tile Company, Woodhull, Ill., has started work for the season at its plant.

The Manteno (Ill.) plant of the Illinois Brick Company, with offices in Chicago, Ill., has resumed operations after the usual winter shut-down.

The Gem City Brick Company, Quincy, Ill., has resumed the making of brick at its plant, which has been idle during the past winter.

The Dallas City Brick and Tile Company, Dallas City, Ill., it is announced, is about to reopen its plant and start the manufacture of brick and tile, the sale of which will be pushed vigorously during the coming months.

The making of brick has been resumed at the plant of M. Heckard and Sons, Canton, Ill. The company has on its books several orders for brick, including one for 200,000 for a new postoffice, on which it will start working.

Thomas Carey, president of the Carey Brick Company, Chicago Ill. has announced his intention to leave that city and make his future home in Los Angeles Cal., where he is now visiting. Mr. Carey has been active in Chicago politics for several years, although recently he has spent most of his time in the West.

The offices of the Hydraulic-Press Brick Company and the Continental Brick Company at Aledo, Ill., have been

SCHULTZ EQUIPMENT SERVICE

A Combination Unsurpassed

It enables us, as Engineers, to give to you double service.

We manufacture and build any machine or equipment used in the industry.

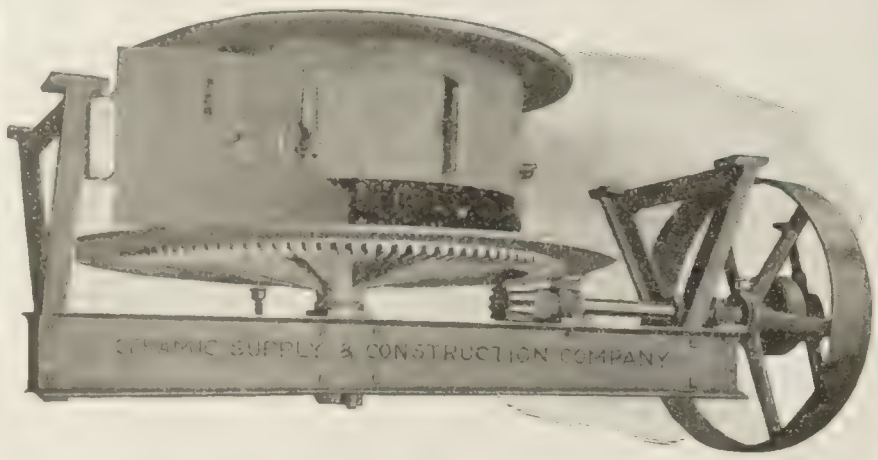
We install all machinery so that it gives efficient service from the first application of power.

We are years beyond the experimental stage, and can direct you to dozens of successful modern installations made by us. Ask us for this information so that you may judge for yourself.

Small Parts, Single Machines
Complete Plants.

A. L. SCHULTZ & SON
1675 ELSTON AVENUE
CHICAGO ILLINOIS





"Bolt It to the Bin"

The Columbus Feeder

for automatically feeding

Crushed Clay to Dry Pans *and* Pulverized Clay to Pug Mills

is fast coming into general use. There's a reason. Let us show you—furnish the machine on trial.

Send for Circular.

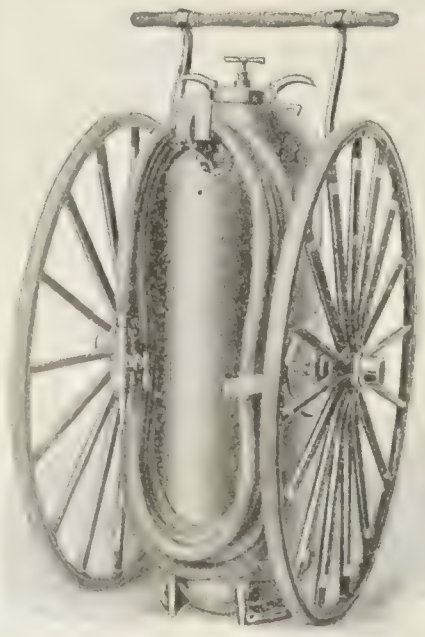
Ceramic Supply & Construction Co.

Columbus, Ohio

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.

40 Liberty St.

UTICA, N. Y.

moved to Davenport, Ia., where they were formerly located. Manager J. L. Buckley, who it will be remembered moved his headquarters to Aledo when the change in location of the offices was made last summer, will return to Davenport. It is stated that the business of the plants now under Mr. Buckley's direction has grown so rapidly that it has become necessary for the offices to be moved back to Davenport, a more convenient location for architects and contractors than Aledo. Two new kilns have been added to the Continental plant, and a large drying fan has just been installed, the capacity of the plant being substantially increased.

INDIANA

The Acme Brick Company, Cayuga, Ind., has resumed operations on full time.

G. C. Davis of Bloomington, Ind., now owns the Charles Garrison brick plant, having bought out Mr. Garrison, the consideration being $6,000.

Frank Makepeace, owner of the Indiana Brick Company, Anderson, Ind., has put on a force of men cleaning up and hauling clay and expects to be running full time very soon.

The Brooklyn Brick Company, Brooklyn, Ind., is running full time, having received orders for one hundred and seventy-five carloads of brick in one week..

The William E. Dee Clay Manufacturing Company recently purchased the plant and property of the Cayuga Brick Company, Cayuga, Ind., and is getting it in shape for a resumption of operations.

The Mitchell Brick Company, Lawrenceburg, Ind., has closed a deal for the sale of its machinery and equipment, together with fifty acres of land, to Bernard Suer & Son, of Cincinnati, who will reopen the plant. The deal also involves the Mitchell Brick Company's yard at Delhi.

The Adams Clay Products Company, Martinsville, Ind., is soon to bring out a new line of red matt brick. The company's new plant at Martinsville is rapidly getting into running order.

The Leach Brick Company's plant, at Kokomo, Ind., will be in charge of Charles Darst this year and has started making brick with a force of sixty men. A good season is anticipated. Mr. Leach, the president, expressing the opinion that there is no reason for believing that business will continue marking time, there being plenty of indications to the contrary.

A two-mile brick road is to be built out of Brazil, Ind., this summer. Although Brazil is one of the largest clay products manufacturing centers in the state, this will be its first roadway paved with brick. Another two-mile stretch of brick roadway is to be built out of Martinsville, Ind., and still another has been ordered in Washington township, Marion county, Ind.

Indiana is facing a good year in the brick and clay products industry. Hard times have not affected public work, nor the quantity of large buildings about to be erected. Already the value of building permits issued for the month of April shows an increase over the same month last year, and a larger total is anticipated than for January, February and March of this year, although these months showed an increase over the same period of 1914.

By adjusting the character of its product and the size of its capacity to fit a demand, the Huntingburg Dry-press Brick Company, Huntingburg, Ind., was able to secure an order recently for 3,000,000 brick for the Academy of the Immaculate Conception at Ferdinand, Ind. The architect who drew the plans specified a certain type and color of brick which the company does not ordinarily make. M. McNelis

of the company learned definitely what was wanted, and then experimented until he was able to produce the desired material. Being able to show samples that met with the requirements, Mr. McNelis had little difficulty in securing the order.

Common-brick were used in the erection of a silo recently on the farm of F. G. Banker, president of the Brooklyn Brick Company, at Knightstown, Ind. Mr. Banker used 13,000 brick, building a silo twelve feet in diameter and thirty-seven feet high. The cost of the brick was figured at $8 a thousand and the expense of laying at $5 per thousand. In addition to these charges, there was the cost of freight from the plant to the farm and $12.50 invested in galvanized iron bands, a very wise provision for the strength of the silo. The brick was laid in double rows, making an eight-inch wall. According to Mr. Banker's figures, he was able to build his silo at a cost which was $150 less than the price asked for a wooden stave silo.

KENTUCKY

The Lexington (Ky.) Brick & Tile Company has moved its office to Liberty Pike, where this company has consolidated with the Lexington Brick Company.

The Dillehay Brick Company, at Danville, Ky., is calling attention to its stock of drain tile with an advertisement headed "Notice to Farmers."

The State University at Lexington, Ky., has opened a course in road building and highway engineering, under the direction of Prof. D. V. Terrell.

The Coral Ridge Clay Products Company, of Louisville, Ky., is doing an excellent business this season and George H. Fiedler, the manager, reports that the plant is running full time with plenty of work in sight.

O. H. Parker and T. A. S. Semple have just received a carload of new machinery for their brick and tile factory, which is in course of erection at Eastwood's Ferry, near Sebree, Ky.

In Maysville, Ky., there is to be a considerable amount of street paving done this summer and the council has named ten sections of streets in the city which are to have that character of improvement. City Engineer Glazier has been instructed to draw up the specifications.

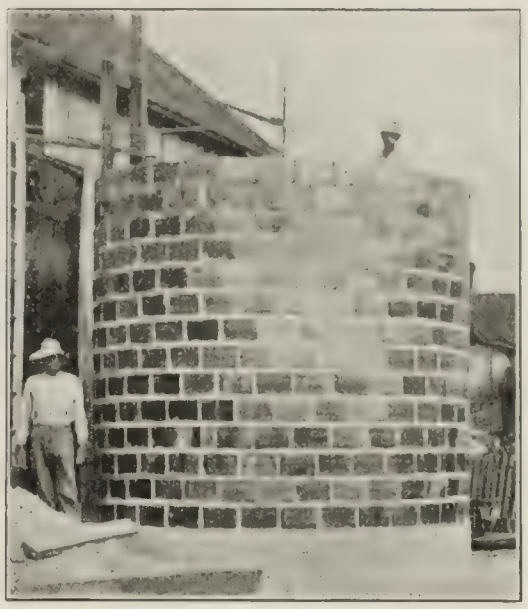
The Barbourville Brick and Tile Company, Barbourville, Ky., has re-opened its plant, operating to capacity, after several months of idleness. It is probable that the plant will continue to turn out its wares for the remainder of the year, employing about fifty men.

The Ashland (Ky.) Fire Brick Company has 900 acres of clay land in Carter County, enough, it is said, to last for seventy-five years. Thirty per cent of this company's output runs to special shapes, according to the statement made by E. H. Garthell, who is its manager.

In the retail field in Louisville the Tyler Building Supply Company reports a good business, most of the contracts being of moderate size though fairly numerous. March closed as a big month with many small orders, making a good total. The company is furnishing the terra-cotta for the new Bernheim store building on Fourth street and has orders for the face-brick to be used in several good residences.

The middle of April has found practically all of the plants around Louisville in operation with long runs ahead and all conditions favoring them. A good many contracts for brick were carried over from last fall and, with open weather, such as the section has enjoyed this spring, building operations began in a hurry and it is promised that they will be cleaned up earlier than was

Do you make Silo Blocks?



Note the Vertical Rod In Door Frame.

Why Not?

There's lots of money in it if you make the right kind.

DURO

Everlasting Clay Block Silos

will increase your income.

Construction is simple, yet it makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.

MOWRYSTOWN BRICK & TILE CO.
MOWRYSTOWN, OHIO

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

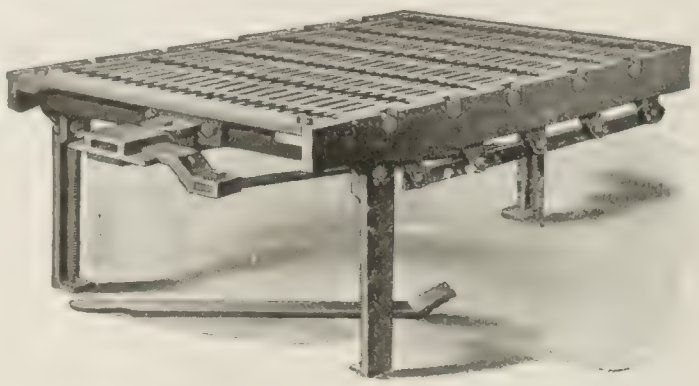
Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

Are you sick and tired of the kiln furnace that gums up every four hours or less with a ball of clinker?

Do you want to prevent the loss of 100° of heat each time clinker time comes?

Do you want to put one dollar's worth of heat into the kiln, from each dollar's worth of coal you buy?

Would you fire your boilers with the same kind of furnaces that you use on your kilns?

Basically—aren't they the same?

THINK—It is applied common-SENSE. Avoid spending so much money for coal.

Send for Bulletin B. It tells you how

CANTON GRATE CO.

1706 Woodland Ave., CANTON, OHIO

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA. CHICAGO, ILL.

Paving Contractors

who use Lehigh Portland Cement for base, filler and grout on all brick paving work

Know Exactly What the Results Will Be

They know that a given proportion will give uniform results in every part of the work and that there need be no guessing as to strength, or uniformity or fineness. Prompt deliveries always.

LEHIGH CEMENT

expected, so enabling manufacturers to be in shape to take care of such work as develops later in the season.

The Hegan Company of Louisville, Ky., which does an extensive business in tile, has recently closed a number of excellent contracts in central Illinois. The Illinois representative of the company, Bernard Arvin, has closed and sent in tile contracts from Centralia, Bardstown, Olney, Sumner and Flora; contracts of considerable size are reported in Louisville and in Danville, Ky. W. F. Manning, the Hegan Company's southern representative, at Camden, reports that prospects are good for business later in the year.

Brick manufacturers and dealers in Louisville, Ky., and vicinity are finding orders somewhat slower than they hoped, in view of the fact that the buildings which have come out to date are more or less large affairs, which means that the contracts are not as well divided as they might be. There is a considerable amount of small work, however, and the manufacturers and dealers have found that it pays to specialize on this business when there is not a great deal of extensive work in sight. It does not mean as much in the way of profits, of course, but on the other hand, it is much easier to get.

A recent news dispatch from Washington contained the announcement that a patent had been granted to William B. Gray, assignor to M. J. Bannon, on a pipe support. Mr. Gray is connected with the P. Bannon Pipe Company, and the patent is on a system of rollers which provides a means by which the contraction and expansion in the pipes used in conveying steam under ground are taken up successfully. These pipes are of the character used in the heating systems which distribute live steam from a central plant and this kind of business is handled largely by the Bannon company.

The Southern Brick & Tile Company, of Louisville, Ky., finds business pretty well up to the mark in all lines, with a good demand all the way along for hard common-brick. When there is little else selling the demand for common-brick continues good. Theophilus Bishop, who is in charge of the drain tile department, has continued this work with excellent results so far this spring. Recent large drainage undertakings which have been completed by Mr. Bishop include those for K. D. Baxter, at Harrodsburg, Ky., and for L. A. Fauster, at Elizabethtown, Ky., an installation at the farm of E. M. Wallace, at Versailles, Ky. The plant of the company at Bishop, Ky., is in steady operation.

It has been noted of late that brick is coming into its own again in the residences which are building in the suburban sections, of which large numbers are going up. This has been helped by the success which has attended a number of the new homes in and around Louisville, Ky. For a time the stucco, semi-Spanish, or the old-English half-timbered house had quite a run in this part of the country and there are many of these houses to be seen. Most of the successful country houses which have been built recently, however, are Colonial in design and are of red brick of high quality. These are more like the early houses of this part of the country and give the feeling of country life better than stucco and light colored brick.

Drain tile manufacturers and agricultural experts are preaching tile drainage with much effect in Kentucky just at this time. There has been a shortage in the rainfall for several years and already this year a drouth is

making itself painfully manifest. The tile enthusiasts are pointing out that the only way to insure enough moisture to mature the crops is to deepen the soil by tiling and by fall plowing. The fact that while use of tile by this means insures more moisture for the crops and at the same time provides a safe way for carrying off the excess moisture, is being made much of, and the sight of one farmer's tiled fields producing bountifully, while his neighbor's fields, without tile, "burn up" is all that many of the farmers need to prompt them to take to place orders for drain tile.

Louisville manufacturers of brick and other clay products are taking an active interest in the movement to establish in Louisville a permanent demonstration of products of the Louisville factories. M. J. Bannon, president of the P. Bannon Pipe Company, is a member of the Commercial Club Committee which has the movement in charge and which announces that it is making definite progress toward realization of the object of its appointment. The idea is to occupy some centrally located building, in which all the Louisville manufacturers who so desire, may make displays of the products of their factories. At this exhibition hall will be established a number of attendants who will be empowered to take orders for anything on display. At the same time, visitors to the city are to be encouraged to inspect the display and it is believed a lot of business will be obtained in this way. Most of the brick plants are some distance from the center of town and trips to them takes more time than the average visiting buyer likes to spend.

LOUISIANA

C. N. Adams will rebuild at Alexandria, La. His plant recently sustained a fire loss, estimated at $12,000.

Hammond, La., has announced that it will call for an election at an early date to secure authority to issue sewerage bonds, the city government having decided upon the erection of a sewerage system, the cost of which is estimated at $33,840.

New Orleans is soon to have its first sand-lime brick plant. James H. Dyett of New York is president of the company. The other officers are Frank Bowers, vice-president; John F. Carter, Jr., secretary; and Lionel M. Ricau, treasurer.

John R. Thompson, of Chicago, Ill., owner of a string of restaurants extending all over the country, has acquired two building sites in New Orleans, one in St. Charles street, the other in Canal. It is announced that restaurant buildings will be erected on each of the sites, work to begin about June 1. The plans have already been prepared by Favrot and Livaudais, architects of New Orleans. The buildings will cover a wide front but will not be skyscrapers; brick and terra cotta will be largely used in their construction.

Property owners on South Division Street, between Kirkman and Bank, New Orleans, La., have petitioned the city council for brick paving, agreeing to bear the entire cost under the terms of the new state law, which allows property owners ten years to pay for the paving. The easy terms of payment for paving under this new law was expected to have the effect of causing property holders to call for brick, the case above mentioned being the first instance of the operation of the law to this end. It is expected that many more petitions for brick paving throughout the state will follow.

MANITOBA

The Pas Clay Products Mining and Development Com-



Lower Prices on Gandy Belt

THE present low price of cotton enables us to buy our raw material for less money.

We are therefore able to reduce the price of The Gandy Stitched Cotton Duck Belting, at the same time maintaining strictly the high quality of our product.

The Gandy is the Pioneer Stitched Cotton Duck Belt. It has been before the public for thirty-six years, and it is giving splendid service wherever employed.

It pays to buy the best—the Gandy Belt is the best by test.

The Gandy Belt gives longer service than the other Stitched Cotton Duck Belts, because it is better made.

Samples and full information will be gladly supplied.

The Gandy Belting Company

732 West Pratt Street, Baltimore, Md.

New York Office: 36 Warren Street

DECLARE DIVIDENDS

at the end of this year—Install

The HOOK SYSTEM

right now—and

STOP WASTING FUEL

You can do it.

The Hook system of Burning Clay Products is not an experiment. It has proven its worth.

Think of this—one company burns drain tile in a 22-foot kiln in 26 hours. This time includes water smoking and high fire.

Another company burns in less than 30 hours, uses six (6) tons of coal, including the water smoking period.

A kiln of brick was burned in 77 hours. It formerly required 168 hours.

We can reduce your costs.

We guarantee satisfaction.

We install in your present kiln —round—rectangular—old—or new.

ASK US—HOW?

Hook Patent Kiln Co.

Main Office Vigo, Ohio

Canadian Office

250 Dufferin St. Toronto, Ont.

pany of The Pas, Man., will build a clay products plant in the near future.

MARYLAND

The Hancock (Md.) Shale Brick Company will erect a brick kiln with a capacity of 135,000 common brick.

The Cumberland (Md.) Granite Brick Works will remodel its plant and will change its product. It is understood that a vitrified red brick will be made under unusual conditions.

MICHIGAN

One million common-brick were used in the walls of the new Majestic theatre, Woodward and Willis avenues, Detroit, being furnished by J. C. McDonald and Company.

George H. Clippert, a Detroit brick manufacturer, has recently undergone an operation, but is now on the road to recovery.

For advertising purposes, imported cigars wrapped in tin foil, and then in tissue paper bearing the name of the company, are being distributed by the Mercier, Bryan, Larkins Brick Company, of Detroit.

Building permits for March in Detroit showed an increase of $538,770 over the same month a year ago, although there were thirty-one less permits issued. The permits called for six hundred and fifty-eight new buildings.

The Baker Clay Company, Grand Ledge, Mich., which plans to open its new plant before the first of May, is equipping a new machine shop in which are to be made all dies and repairs to the motors, as well as general repair work for the plant.

The brickmaking industry of the city will be well represented at the annual boat trip to be made in June by the Detroit Board of Commerce. Already many of the brick dealers and manufacturers have made reservations, and it is planned to have one entire section of the boat set aside for the brick party.

While it is true that every day shows improvement in the brick business in Detroit, both for the manufacturer and the dealer, it must be admitted that conditions are not up to the 1913 standard, which was a banner year. However, on the other hand, the demand for brick is better than that of last year for the same period.

John S. Haggerty, brick manufacturer of Detroit, has returned from a month's trip to California and the Panama-Pacific Exposition. Mr. Haggerty did not enjoy the best of health during the trip, but nevertheless took great pleasure in the sights at the exposition. Mr. Haggerty was greatly interested in the model brick house that has been built at the exposition by the Panama-Pacific Clay Products Association, to demonstrate the beauty and economy of brick residence construction.

The Detroit Brick Manufacturers' and Dealers' Association is aiding very materially in the campaign for funds for the proposed new Rescue Home for Girls and Women, to be erected at West Fort street and the Boulevard, Detroit. The association has had printed about 50,000 "dodgers" bearing the caption "Don't throw a brick, buy one," which it is arranged to have inserted in the pay envelopes of many large industrial institutions. The home is to be of brick construction throughout.

MINNESOTA

The Farmers Brick and Tile Company, Austin, Minn., has received an order calling for tile amounting to $11,-

970, to be used in a large drainage ditch in Worth county, Iowa.

The Luvern Pressed Brick Company, Luvern, Minn., has sold its plant and property to C. H. Peterson, who is also interested in the Luvern Concrete Company. The plant which produces a sand-lime brick will be operated by Mr. Peterson in conjunction with his other interests.

MISSISSIPPI

Humphries and McGinnis, contractors of Greenwood, Miss., have contracted to build five brick stores in Schlater, Miss., a town near Greenwood. The buildings are to replace frame structures recently destroyed by a fire which all but wiped out the business part of Schlater.

Schlater, a town near Greenwood, Miss., was visited by a second destructive fire April 6, buildings valued at $40,000 being destroyed. This damage, together with that wrought by the other fire which came less than a month ago, leaves the business district nearly wiped out. Property owners, however, will rebuild immediately, using fireproof construction, consisting largely of brick.

The destruction by fire of the New Magnolia House, a fashionable hotel at Pass Christian, Miss., following immediately after the burning of Lynn Castle, another of the town's fashionable hostelries, has set the public thought in motion. As a result, the erection of a modern hotel of fireproof construction is being discussed. Both the hotels recently destroyed were frame buildings, the aggregate loss for the two amounting to more than $100,000.

MISSOURI

The Mandle Clay Company, of St. Louis, Mo., and Paris, Tenn., is doing considerable work in the clay pits about Henry, Tenn.

NEW BRUNSWICK

The Dominion Motor Car Company of Coldbrook, near St. John, N. B., has discovered valuable beds of clay on its property and is considering the establishment of a brick and tile plant.

NEW JERSEY

The Porcelain Syphon Head Company has been organized in New Jersey to make porcelain tops for vichy syphons and the like. These will take the place of the metal tops which it is claimed are not sanitary.

The Clifton Porcelain Tile Company has succeeded the Clifton Pottery in Newark, N. J., and is making tile by a new and patented process. It is an all clay proposition, the Jersey clay being combined with a porcelain mixture. The law against lead-glazing has not been enforced as it proved difficult to get satisfactory results without it. This new process, however, does away entirely with lead-glazing. The old flint tile is porous while the new tile is absolutely vitrified and non-absorbent. It is expected that this tile will be largely used for subway work and the Clifton Porcelain Tile Company is figuring on enlarging the plant.

NEW YORK

The Maryland Coal Company of No. 1 Broadway, New York City, has one hundred acres of fire clay land at St. Georges Creek, near Mount Savage, Md., which it is rumored will be developed.

Orders now on the books of the company will keep the plant of the Vitrified Brick Company, near Warner, N. Y., busy for some time to come, according to John H. Meade, president of the company. With the building season under



Type "B" ¾ Cu. Yd. Erie Shovel

"The ERIE Is A Very Satisfactory Proposition"

That's the characteristic comment of owners of

Erie Revolving Shovels

Read This Letter

PHILIP DIEFFENBACHER & SONS
Contractors

Massillon, O., Apr. 3, 1915.

2036 Wooster Street.

Gentlemen:—
We have at hand your letter of the 30th ultimo, and are pleased to be able to give information regarding the Type "B" ¾ Yard Erie Shovel.
We find that the shovel will do all that is claimed by the makers, and that it is very practicable to operate.
We have just completed a six-foot ROCK CUT which was about 100 ft. long and 35 ft. broad—the rock was a very hard sandstone. We loosened the rock with 50 lbs. of 50 per cent dynamite and then loaded it out at the rate of about THREE HUNDRED YARDS PER DAY OF NINE HOURS and could have done much beter, if we had had more teams.
We find that, in comparison with other shovels that are doing work in this vicinity, the Erie is a very satisfactory proposition.

Yours truly,
PHILIP DIEFFENBACHER & SONS.
By F. L. Dieffenbacher.

You may not have **rock** to dig, but it is satisfaction to know that the Erie has the strength and power to handle it.

THE TYPE B IS JUST THE RIGHT SIZE FOR HANDLING CLAY IN BRICK PLANTS HAVING CAPACITIES UP TO 150,000 PER DAY. It will handle the lighter shales, too, without blasting.

Send for Catalog "A" today.

BALL ENGINE CO.
ERIE, PA.

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press
Auger Brick Machines
Down Delivery Tile Mills
Oil Burning Equipment
Crude Oil Engines
Piano Wire Screens
Dry and Wet Pans
Soft Clay Brick Machines
Pug Mills
Wet and Dry Clay Disintegrators
Smooth and Conical Roll Crushers
Wood Moulds
Trucks and Barrows
Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.
20 W. Jackson Blvd. Chicago, Ill.

way, Mr. Meade looks for a steady gain in business from now on. Fifty-six men on full time are now being employed at the plant and the force will be increased just as fast as working facilities will permit.

NORTH CAROLINA

R. L. Steele, who is president of Steele's Mills, has eighty-eight acres of kaolin at Rockingham, N. C., which it is said, he will begin developing very shortly.

The Riverside Brick Company, Charlotte, N. C., has been formed and incorporated for the purpose of taking over the plant and property of the Carson Brick Company, located on the outskirts of Charlotte. It is announced that the new corporation will add to the equipment of the old plant sufficiently to bring its capacity up to 40,000 brick per day. J. R. Van Ness is president; H. A. Morson, vice-president and W. R. Taliaferro, Jr., is secretary and treasurer of the company.

OHIO

M. A. Callahan, Schofield Building, Cleveland, Ohio, is interested in the erection of a new tile plant which will be built at Eustis, Fla.

E. McShaffrey and Son, of Akron, Ohio, has the contract calling for the paving with brick of two and a half miles of road in Summit county, Ohio.

The Cleveland Mantel and Tile Company, Cleveland, Ohio, has been incorporated by P. S. Crampton, F. B. Fulte, H. L. Davis, Charles H. Cross and Charles R. Brown.

Judging from the number of bids being called for on sewer work by various municipalities in the vicinity of Cincinnati, sewer pipe manufacturers are going to have plenty of business this spring. The town of Dayton, Ky., just across the river from Cincinnati, is asking for bids on half dozen sewer jobs, vitrified sewer pipe being specified, in sizes ranging from twelve to twenty inches. The work will be started, if possible, during the current month.

The relatively small amount of construction work handled in Cincinnati during the past winter has left on hand with several of the manufacturers of brick large reserve stocks. One of the concerns thus incumbered is the Cincinnati Brick Company which has a considerable supply still on hand, and will not open up its plant until some of this stock is disposed of. Judging from the way building is progressing, however, it does not expect to have to wait very long for this.

Trouble is brewing, between the two hundred union bricklayers of Dayton, Ohio, and the mason contractors, growing out of a demand which has been made by the men for an increase of two and one-half cents an hour. The matter is being discussed, and it is hoped that a clash will be averted, as it is felt that Dayton, which is still working under the handicap imposed by the flood disaster of 1913, should not be still further burdened by labor troubles in the rehabilitation of that part of the devastated area which is still unrepaired.

The U. S. Roofing Tile Company, of Sparta, Ohio, is making quarry tile and has 160 acres of shale which is especially adapted to this kind of ware. The demand has been very strong and as the tile is hard burned, it is bound to grow in popularity, some stating that it will eventually displace the Welsh quarry tile formerly imported. This concern also makes the Spanish roll pattern roofing tile and some promenade tile. Recent im-

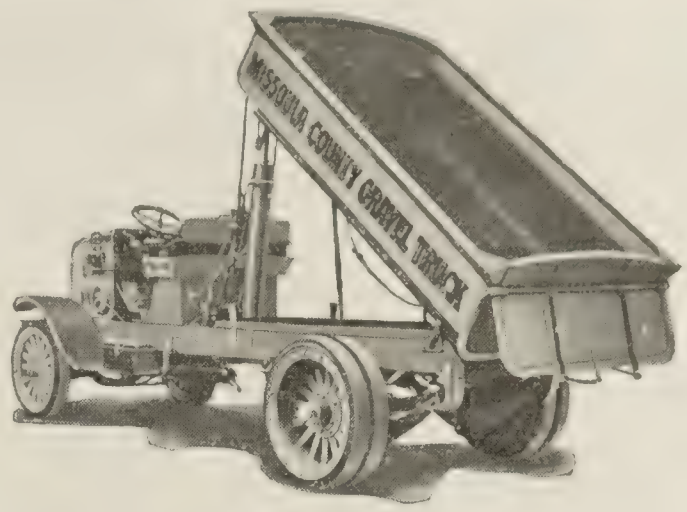
provements have brought the plant up to a high state of efficiency.

The Pursell-Grand Company, one of the leading brick and material dealers of Cincinnati, has made a distinctly new departure in brick publicity work, having completed arrangements to cover Cincinnati thoroughly with posters advertising burned clay as the best of all building materials. Cincinnati, with its hills, is a city of billboards, and while these publicity mediums are not always all that could be asked from an artistic standpoint, they are undoubtedly very useful as a means of telling people how good a thing is. The Pursell-Grand Company believes that the results of its campaign in this direction will be very much worth while.

The Moores-Coney Company, Cincinnati, whose brick display rooms are probably as complete as any in the country, has difficulty frequently in finding space for its new lines, in spite of the large office space which it uses, occupying the entire ninth floor of the St. Paul Building. However, the fact that there is always room for one or two more lines was recently demonstrated, when two new brick panels were installed in unusually attractive positions, between windows in the separate brick display room. The company reports a number of orders on hand, with many more in sight, most of which are of the smaller sort. This, in fact, seems to be one of the characteristics of the season thus far—the large amount of relatively small work which is going to make up the good-sized totals being registered.

The new Cincinnati (Ohio) general hospital, recently completed after several years of work, is not only one of the finest institutions of its kind in the country, but, as it happens, constitutes one of the biggest brick jobs ever handled in Cincinnati. This fact may be more deeply impressed from the statement that the hospital group comprises twenty-four buildings, with others provided for to be built in the future, and that the total cost of the buildings, grounds and equipment was more than $4,000,000. About 2,500,000 of the Hydraulic Press-Brick Company's iron spot brick were required for the buildings, while all of the porches, covered passageways and roofs, where not used as sun-parlors, are covered with red clay roofing tile. A large amount of hollow-brick, common brick, fireproofing and other clay material, furnished by local manufacturers, was used throughout the buildings, contributing to the modernity of the construction, and making the buildings as nearly fireproof as it is possible for them to be. The floors are for the most part finished in clay tile, much of which, especially in the bath-rooms, is enameled.

The increase in building activities in Cincinnati, Ohio, for this spring, and for the year as a whole, which has been forecasted for some time, is already manifesting itself, as shown by the Cincinnati building commissioner's report covering the month of March, and also first quarter of the year. Compared with 1913 and 1914, the past three months show substantial gains, both in the number of permits issued, and in the value of the improvements made. For March, 1915, 1,652 permits were issued, covering work at an estimated value of $1,356,124, while in March of last year the number of permits was only 1,188, with a value of $863,810, the difference being nearly a half million dollars in favor of this year. In 1913 the number of permits issued in March was 1,126, with a value of only $791,310. For the first three months of this year 3,337 permits were issued, the improvements totalling $2,307,119 in value, as against 2,908 permits and $1,761,235 in 1914, and 2,710 permits and a value of $2,085,104 in 1913. On the whole, therefore, it is evident that the coming season may be expected to be one of unusual activity, as compared with the past two years. Members of the building and material trades are jubilant over the prospects, espe-



This Truck Will Save Big Money

A KisselKar Truck equipped with dump body operated by means of a hydraulic lift, discharges its load instantaneously.

It saves thousands of dollars in the haulage of building and paving material. It requires only the driver to operate it and he does not have to leave his seat to do so.

Whether with this dump body or any other style of body that may be better adapted to the work in hand, a KisselKar Truck chassis is an incomparable mount.

KisselKar Trucks

IN SIX SIZES

Let us point out to you in detail the superior construction and workmanship of KisselKar Trucks.

Let us give you the names of others in **your line of business** who have found them money-savers and money-makers.

Let us send you a copy of our truck portfolio illustrating hundreds of these sturdy vehicles as they appear in the service of owners.

The more carefully you investigate trucks the more certain it is that you will select KisselKar Trucks.

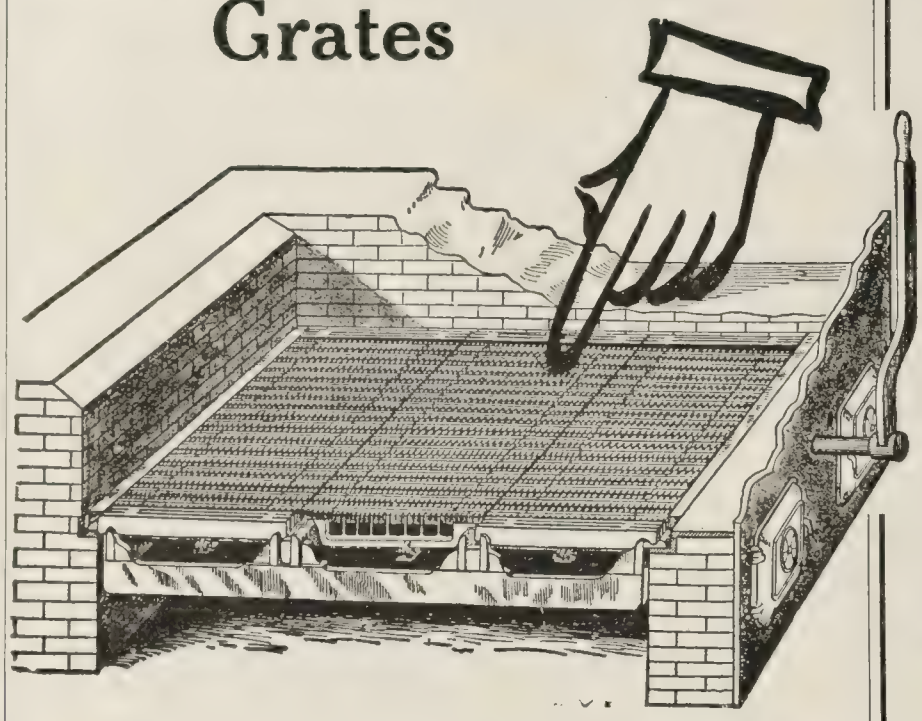
Kissel Motor Car Co., 568 Kissel Avenue, Hartford, Wis.

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Baltimore, Pittsburgh, Cleveland, Detroit, San Francisco, Los Angeles, Seattle, Buffalo, Rochester, Columbus, and 300 other principal points.

TEAR OUT YOUR OLD GRATES

YOU CAN BETTER AFFORD TO DO THIS, AND INSTALL

Martin Grates



Don't Wait Until the Old Grates Wear Out

TEAR THEM OUT

Martin Grates installed in their place will soon pay for themselves and immediately start paying dividends.

Burn LESS Coal and CHEAPER Coal to deliver the same amount of heat you are getting now.

The Martin Grate Co.

347 S. Dearborn St. Chicago, Ill.

cially in view of the fact that the better part of last season was killed by the carpenters' strike. There are no labor troubles in sight to prevent construction work going ahead on a normal basis this year, and indications are that it will.

ONTARIO

George Thompson of the Thompson-McDonald Company is promoting a drain tile plant at Coburg, Ont.

The Canada Resources Development Company will erect a brick plant on its property at Port Arthur, Ont.

The Toronto and Hamilton Sewer Pipe Company has moved its offices in Toronto, Ont., to the Dominion Bank Building.

The Superior Brick Company has, it is rumored, spent $250,000 on improvements made to its plant at Fort William, Ont.

There are two new sewer pipe factories in Hamilton, Ont., one being the Canadian Sewer Pipe Company and the other the Clay Products Company.

The Chatsworth Brick and Tile Company, Chatsworth, Ont., is now building new kilns and installing new equipment at its plant.

The Don Valley Brick Works has moved its offices to the New Dominion Bank Building in Toronto, and has installed a show-room which rivals any in Canada.

The Toronto Pottery Company, which is the Canadian branch of the Robertson Clay Products Company of Akron, Ohio, has moved its offices to the Dominion Bank Building in Toronto, Ont. T. A. Case is in charge.

The Ontario National Brick Company has completed its new plant at Toronto which, it is stated, has cost more than one million dollars. The capacity is 300,000 bricks per day.

The Black Building Supply Company of Toronto, Ont., which represents the Hydraulic-Press Brick Company of St. Louis, is introducing a new porcelain brick to the architects of Toronto and vicinity. It is thought that this brick will find favor and will be used extensively by builders in that territory.

When the Canadian Northern Railway took eleven acres of land which belonged to the Don Valley Brick Company of Toronto, Ont., it offered Robert Davies, owner, $3,000 and later increased the offer to $5,000. Both offers were refused and carried to the courts. After a legal battle the railroad company was compelled to pay him $332,000 and costs.

OREGON

The valuation of the building permits issued in Portland, Ore., during March reached a total of $503,000, or about $200,000 more than for the month preceding, and $380,000 less than for the same month last year. The demand for brick is not very active at present.

PENNSYLVANIA

Citizens of Hazelton and Wilkes-Barre, Pa., have subscribed the $150,000 stock issue of the newly organized Hazelton and Wilkes-Barre Brick Company.

Francis T. Owens has been appointed manager of manufacturing, for Fiske and Company, Inc., of Boston, Mass. He will make his headquarters at Ridgway, Pa.

O. W. Ketcham, of Philadelphia, Pa., is furnishing 500,000 rough surfaced red face-brick for the new Central High School being erected in Washington. All of the other brick is being furnished by the District workhouse.

The management of the Jarden Brick Company, with offices in the Land Title Building, Philadelphia, declare that they are experiencing a most satisfactory business

this spring, and have several large orders on hand for brick to be used in residence work.

The Bingen Brick Company, of South Bethlehem, Pa., with orders on hand for approximately 3,500,000 brick, looks forward to the most successful year in the history of the company. Extensive alterations and improvements have been made to the plant and new machinery has been installed. The firm announces that the plant will be run on full time for an indefinite period.

John F. Brady, with offices in the Crozer Building, Philadelphia, reports that he has closed orders with the city for about 6,000,000 brick to be used in the construction of the new sewer systems in the city. He also announces that he has orders on hand for 7,600,000 salmon brick to be used in dwelling operations throughout the city. Mr. Brady declares that he expects a record breaking volume of business during the spring season.

The brickmakers and dealers of Philadelphia and vicinity are about to enter into a very busy season. While building operations are not as yet fully under way, local dealers have already experienced the effects of the activity which is bound to be in evidence at the termination of a week or ten days. Most of the manufacturers are busily occupied in seeing that orders are being filled in a satisfactory manner, and that shipping facilities have been carefully adjusted. Several large orders have recently been given out by the city.

Thomas B. McAvoy, president and treasurer of the McAvoy Vitrified Brick Company, Philadelphia, reports that the company is having electrically driven machinery installed in its plant at Perkiomen, Pa. One of the motors will be of three hundred and fifty horse-power. He also states that they have been shipping large quantities of ware to Elizabethtown and Newark, N. J. Mr. McAvoy thinks that business for the brick dealers and manufacturers for the spring season will be of a very satisfactory nature.

QUEBEC

The large plant of the Mount Royal Brick Company has been put in operation at Varennes, Que.

RHODE ISLAND.

The Barrington Steam Brick Company, Barrington, R. I., which has been closed down the greater part of the past winter, is about to resume operations at its plant.

Buy it Now

Get what you need, now. Prosperity is catching. Tell your neighbors truthfully that you are "buying right and left" and they will believe in the rumors that they have heard, that "good times" are imminent. Tell them you are buying cheaply, because men are anxious to get back to work. See if they will follow your example or not. See if this won't bring some prosperity right into your home town.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

The addition of two more kilns to the plant of the French China Company's plant at Sebring, Ohio, will give that con-

10 Good Reasons

why you should install the

Underwood Producer Gas Burning System

PATENTED

1. Immense saving in fuel consumption.
2. Immense saving in labor for watersmoking and burning kilns of clayware, as may be determined.
3. Great reduction in time of burning, ranging from 25 to 50 per cent.
4. With this system you can set the ware closer and thus increase the holding capacity of each kiln from 7½ to 15 per cent.
5. Because of the advantages gained under reasons 3 and 4, an increased daily burning capacity is assured without additional investment in kilns.
6. Maintenance expense is reduced by obviating the necessity of relining furnaces at various periods otherwise required.
7. This system of burning prolongs the life of kilns.
8. Because of reasons 5, 6 and 7, a large reduction in the yearly maintenance cost of kilns is shown, and where space is an object, it likewise is saved, although otherwise required.
9. You save labor in avoiding distribution of coal to kilns or removal of ashes from kilns.
10. You will likewise dispense with horses and carts or cars used for such coal and ash handling.

SEE SUBSEQUENT ISSUES FOR ADDITIONAL REASONS

The Manufacturers Equipment Co.

Everything for the Clay Worker

Dayton, Ohio, U. S. A.

Ask Any Users of

STEVENSON MACHINERY

Whether they would buy the Stevenson product again—on the answer you get we are willing to base our claims to your patronage.

Situated in the very center of the clayworking industry we have had the fortunate opportunity to study the needs of clay workers at first hand, and no matter where you are located we give you the benefit of this practical experience.

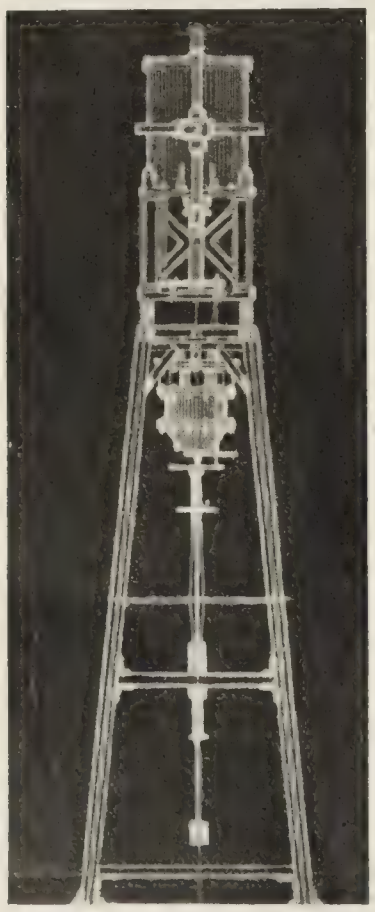
We make the very highest grade of

Brick, Tile and Sewer Pipe Machinery

and our prices are low because we have the only electric-equipped plant of its kind in the country, which reduces our manufacturing cost to the minimum.

HERE'S OUR LATEST

One or Three-Rod Tile and Sewer Pipe Press



GUARANTEED

to make tile from 3 in. to 36 in. and more large pipe than any other machine on the market. We have the records to prove it. Let us send you blue print and full description of this press—it's the "last word" in a machine of this kind.
Have you got our catalog?

THE STEVENSON COMPANY

WELLSVILLE, OHIO

"IN THE HEART OF THE CLAY INDUSTRY"

cern a capacity of fourteen kilns, and places the company among the largest producers of American ware in the country. There is no denying the fact that this particular pottery is one of the most active in the country at the present time, the additional kilns being built on account of the increased business that has come to this concern.

Until something more definite is announced, not much credence is being placed in the report that a thirty-kiln domestic ware pottery is to be built in the vicinity of Alliance, Ohio. This plant, if built, would be just two kilns less in size than the original pottery built in Newell, W. Va., by the Homer Laughlin China Company, of East Liverpool, Ohio.

Frank H. Hutchins, national vice-president of the Brotherhood of Operative Potters, and one of the recognized labor leaders in the vicinity of Trenton, N. J., is being urged for the May election of City Commissioner of Trenton. Mr. Hutchins is being boosted by his many friends, who feel that he would make a particularly fitting representative of the working people in that office. He was one of the successful candidates at the primary election of four years ago and was the sixth man to finish in the final election. He served a term on the Police Board under the old administration, and his record with that body has met with public approval.

In order to maintain a higher degree of efficiency in the manufacturing of domestic pottery, the manufacturers are bending every effort to improve their lines, both as to body and glazes and decorations. During the past six months a decided change along these lines has been noticeable. The western potteries are now working on longer time than since the opening of the new year. In one instance, the decorating department of a large pottery is working five nights a week. The demand for domestic decorated ware is showing a decided improvement all along the line, and this is especially true of the higher class of wares.

Pottery manufacturers in the western district hold that within the next two months, the various domestic manufacturers will have about all the business they can conveniently handle. Just now the trend of general business is upward and plants which have been operating on only partial time since January have increased their working capacity. It is also held that, while the importers are booking business, the salesmen admit there is no telling when these orders will be delivered. It is declared that the longer the European war is continued the stronger will grow the demand for domestic pottery.

Western sanitary pottery manufacturers hold that, with increased building activity this season, their plants will work on a far greater capacity than they did during 1914, which has been admitted as an off year for the sanitary business. There is some talk of a new sanitary pottery being located in New Cumberland, W. Va., but these plans are only in the making. In the West Virginia district there is some improvement in the sanitary trade, the manufacturers reporting a better inquiry for deliveries.

Efforts are being made by the Business Men's Club of Memphis, Tenn., to secure the next meeting of the United States Potters' Association, which will be held during the coming summer. The convention was held in Columbus, Ohio, last year. The assembly place for 1915 was left in the hands of the secretary, Chas. F. Goodwin and a committee. The recent discovery of extensive clay deposits in western Tennessee has also caused the railroads to take a growing interest in this industry.

The report is current that plans are now being worked out for the erection of a new domestic pottery in the vicinity

of Chattanooga, Tenn. It is known that several East Liverpool potters have made a trip to Tennessee with this end in view, but to date they refuse to announce any plans which they may have for a pottery in that part of the country.

A dinner was recently given by members of the Frenchtown Porcelain Works, Frenchtown, N. J., at the Warford House, Philadelphia, in honor of Herbert Sinclair, Frank Gardiner, William P. Soper and William R. Gaskill, members of the plant. The Frenchtown Porcelain Quartet rendered several selections.

The Warwick China Company of Wheeling, W. Va., has just completed the most successful year in the history of the plant, which specializes on table and hotel ware. The recent reductions in the tariff on this class of clay ware were nullified by the almost complete stoppage of shipments from abroad.

The Clay Products Company of Lexington, Ky., has bought a ball clay mine with a sixty ton daily capacity. This mine is located at Paducah, Ky., and it is said that a pottery will be erected by the Clay Products Company at that place. A. O. Hedges of Lexington, Ky., is president.

W. Edward Wells, secretary-treasurer of the Homer Laughlin China Company, of Newell, W. Va., has been selected by Governor Hatfield, of that state, as a member of the Virginia-West Virginia Debt Commission. The appointment was due to a vacancy on the West Virginia side of the Commission.

The Southern Mineral Products Company has been organized with a capital of $250,000 to absorb the Georgia Mica Company, of Jasper, Ga., and to establish a plant at Atlanta, to produce feldspar.

The new plant of the Albright China Company, at Carrollton, Ohio, will be placed in operation before long with a capacity of five kilns. This is the second domestic ware pottery to be erected in Carrollton.

W. A. Pedigo and W. G. Jones, of Roanoke, Va., have taken over a deposit of one hundred and thirty-one acres of kaolin land at Cold Spring, Augusta County, Va., and are now experimenting with it.

F. G. Mellor, formerly of the Cook Pottery of Trenton, N. J., is the new superintendent of the Wheeling (W. Va.) Tile Company, having succeeded F. G. Garrett, who went to Detroit, Mich.

The Florida China Clay Corporation, Manhattan, Fla., has been incorporated with a capital stock of $100,000, by E. J. Noonan, C. V. Burke and A. W. Cramer, all of New York, N. Y.

L. J. Smith and Company of Kansas City, Mo., are about to develop the kaolin deposits which they own at Leakey, Tex. They are now building a railroad connection to the mines.

Walter S. Stapler, general manager of the Stevens Brothers Company, of Stevens Pottery, Ga., has acquired a clay mining privilege valued at more than $100,000.

Frank A. Sebring of the Sebring (Ohio) Pottery Company has kaolin deposits at Maldoon, Tex., which he is experimenting with and will probably develop.

T. L. Cook, of Alpine, Ala., contemplates extensive development of china clay property in Talladega County, Ala.

The Athens Pottery Company, Athens, Texas, has reopened its pottery plant for the manufacture of jugs, jars, churns and other clay products.

SAFE DRYING

means circulation
and absolute control of heat.

The NATIONAL Exhaust Steam DRIER

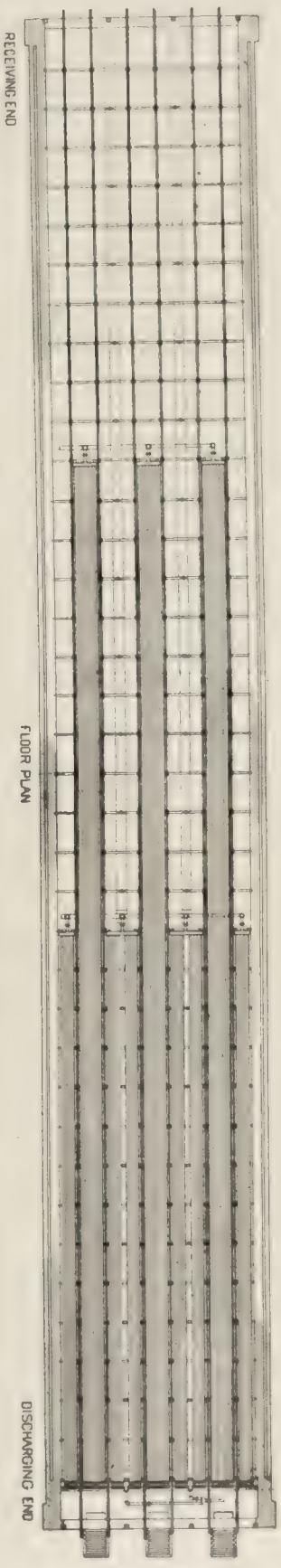
will accomplish the desired results, quickly and cheaply. It does not use shafting, pulleys, belts, fans or conveyors; and it costs absolutely nothing to operate in the daytime for

It Uses

Exhaust Steam

during operating hours, and only a few pounds of live steam at night.

Note on the sketch the way in which heat is automatically controlled. A postal to us will start you on SAFE DRYING.



The National Dry Kiln Co.

1118 E. Maryland Street
Indianapolis, Ind.

The Ambursen Company as Tramway Engineers

We are often asked why the AMBURSEN COMPANY took up Short-Haul Transportation as a Department. The answer is timely because it strengthens our position as Consulting Engineers for the purchaser.

The AMBURSEN COMPANY is known everywhere as Engineers and Contractors in heavy concrete work in hydraulic construction. During the depression of the past two years we have made a systematic study of all methods leading to reduction of cost per yard. A heavy item is the haul of material, gravel, sand, broken stone, cement, steel, etc., etc., from the railroad point, the quarry or gravel pit to the work. The great sums of money expended by us in this item led to an investigation to discover some feasible means of mechanical transportation. Recognizing that the old forms of tramway had no place in such service we were fortunate in happening upon the Lawson Tramway which at once appealed to us as possessing the exact features required. During this investigation our Mr. Church became the Consulting Engineer of the Consolidated Tramway Company. In the course of time, however, the broadening possibilities became so evident that it carried the future development of the business to a point further than that Company was organized to follow. We therefore made a proposition to take over the entire business, plant and equipment, which proposition was accepted and is now in force.

Having secured control of the business we set about redesigning the entire construction on improved lines for a more extended service than had been contemplated. This redesigning has covered practically every detail of the tramway as well as introducing many new features looking into its broader application.

In presenting the **LAWSON TRAMWAY** therefore we have the great advantage of being thoroughly conversant with the requirements **from the user's standpoint.** To this we add the advantage of a complete engineering and construction organization which permits us to take contracts for tramways delivered and erected,—a point hitherto carefully avoided.

Take note of the fact that we were not **obliged** to go into the tramway business. We were not already in it,—had no investment to protect. We came into it from the outside,—not the inside. Our spirit was critical,—far more critical than that of the non-professional purchaser. We took over the Lawson Tramway therefore because we saw in it the fundamentals of a complete reorganization and expansion of the Short-Haul scheme and foresaw the founding thereon of a great business. We are not disappointed.

Very respectfully,

AMBURSEN COMPANY

Tramway Department

61 Broadway, New York

Freight Tariffs and Troubles

(*Continued from page 778.*)

November 1, 1912, found unreasonable to the extent that the rates for the portion of the transportation beyond Jacksonville exceeded those now in effect. Reparation awarded."

No attack was made by the complainants on the present rates or minimum weight and it is understood that the carriers are now attempting to readjust the rates beyond Jacksonville to conform more nearly to the requirements of the Fourth Section of the Act to Regulate Commerce.

The Bibb Brick Company, of Macon, Ga., has just entered a complaint with the commissioners against the Central of Georgia Railway Company; the Nashville, Chattanooga & St. Louis Railway; the Cincinnati, New Orleans & Texas Pacific Railway Company, and the Cincinnati, Hamilton & Dayton Railway Company, relative to a shipment made from Macon, Ga., to Dayton, Ohio, on November 20, 1913, on which the charges were unreasonable. The amount of reparation claimed is $252.92.

Only two reparations have been allowed clay products manufacturers since our last issue. They were:

To the North Indiana Brick Company vs. the Michigan Central Railway Company. A refund of $6.15 on account of drayage charges incurred because of the misrouting of a shipment of common-brick from Michigan City, Ind., to South Bend, Ind.

To the Swanson Brick & Tile Company against the Northern Pacific Railway Company. A refund of $51.20 was allowed because of an unreasonable rate applied on five carloads of building tile shipped from Minneapolis, Minn., to Ashland, Wis.

A brief has just been filed with the commission by attorneys for the American Enameled Brick & Tile Company, in their case No. 7515 against the Raritan River Railroad Company, et al.

The only hearing and arguments of interest to the general shipping trade set since our last issue are the argument to be held before the commissioners, at Washington, D. C., on April 22, in I & S Docket No. 435, which takes up car spotting charges and that set for April 30, at Chicago, Ill., before Examiner Kelly, of the commission in I & S Docket No. 549—taking up the stopping of cars in transit to complete loading or partially unloading.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points

From Clermont, St. Marys, Drummond, Kaulmont and Shawmut, Pa., brick to Bath Beach, Greenwood, Kensington, 39th Street and Third Avenue, New York, N. Y., and to Gravesend, N. Y., $2.46 per net ton; to Coney Island, N. Y., $2.86 per net ton.

From North Haven, Conn., common brick, to Narragansett Pier, R. I., $1.25 per net ton.

From Troy, N. Y., fire brick and fire clay, to Garneau Junction and Grand Mere, Quebec, 14.7c per cwt.

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Stevenson Co., The.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.
Scandinavia Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Scandinavia Belting Co.
Weller Mfg. Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Blower Co.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Link-Belt Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Stevenson Co., The.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mc. Mfg. Co., H.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.
Stevenson Co., The.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Martin Brick Machine Mfg. Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.
Stevenson Co., The.

Clay Handling Machinery.
Clearfield Machine Shops.
Link-Belt Co.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Weller Mfg. Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
Chambers Bros. Co.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Colors.
Clinton Metallic Paint Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Dodge Mfg. Co.
Manufacturers Equipment Co.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Link-Belt Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.
Scandinavia Belting Co.

Cordage.
Broderick & Bascom Rope Co.
Dodge Mfg. Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Machy. Mfg. Co.
Sackett Screen & Chute Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Specialty Wire Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Stevenson Co., The.

Dynamos and Generators.
Westinghouse Elec. & Mfg. Co.

Electric Shovels.
Ball Engine Co. (Erie Shovels)
Link-Belt Co.
Marion Steam Shovel Co.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Taylor Instrument Companies.

Elevator Buckets.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Gandy Belting Co.
Link Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Copping Bros.
Cutshall, J. M., & Carl.
Deavitt, H. M.
Frink Pyrometer Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Eq. Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
Arbuckle & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Schaffer Eng. & Eq. Co.

Fans.
American Blower Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filter Presses.
Baird Machine & Mfg. Co.
Stevenson Co., The.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.

Fuel Economizers.
Sturtevant Co., B. F.

Gears.
Baird Machine & Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Schultz & Son, A. L.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Grate Co.
Murray Iron Wks. Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Hygrometers or Moisture Indicators.
Taylor Instrument Companies.

Inspection Tests—Consultation.
Deavitt, H. M.

Interlocking Block.
Smith, W. W.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Eq. Co., The

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Gerlock, H. W.

Lime Mixer.
Gerlock, H. W.

Link Belting.
Link-Belt Co.

THE BUYERS' DIRECTORY—Continued

Locomotive Cranes.
Link-Belt Co.

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Metallic Paint.
Clinton Metallic Paint Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Westinghouse El. & Mfg. Co.

Oil Burners.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Test Instruments.
Taylor Instrument Companies.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.

Power Plant Equipment (Complete).
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.
Taylor Instrument Companies.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.
Schultz & Son, A. L.
Stevenson Co., The.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Frink Pyrometer Co.
Price Electric Co.
Stupakoff Laboratories.
Taylor Instrument Companies.

Quartz Glass Articles.
Englehard, Chas.

Radiation Pyrometers.
Taylor Instrument Companies.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Frank, M. K.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Manufacturers Equipment Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Price Electric Co.
Taylor Instrument Companies.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Martin Brick Mach. Mfg. Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Link-Belt Co
Schofield-Burkett Cons. Co.
Stevenson Co., The.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Shale Planer.
Arbuckle & Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Silo Front.
Zook, G. W.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.
Taylor Instrument Companies.

Steam Shovels.
Ball Engine Co. (Erie Steam Shovels)
Marion-Osgood Co.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Steel Ties.
Cincinnati Frog & Switch Co.

Sprocket Wheels.
Link-Belt Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Stevenson Co., The.
Weller Mfg. Co.

Switches and Frogs.
Cincinnati Frog & Switch Co.
Buckeye Rolling Mill Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Foster Co., L. B.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co
Standard Dry Kiln Co.
Taylor Instrument Companies.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Jackson & Church Co.
Chase Fdry. & Mfg. Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co., The.

Unloading Devices for Pans.
Clearfield Machine Shops.

Wagons.
Manufacturers Equipment Co.

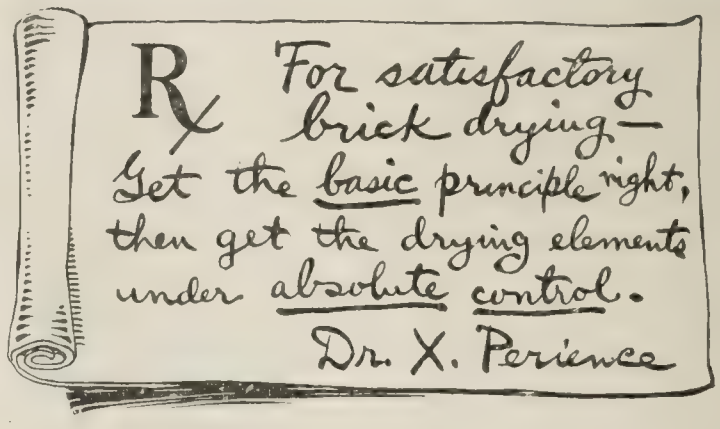
Wet Pans.
Jackson & Church Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels.
Lehigh Car, Wheel & Axle Works.

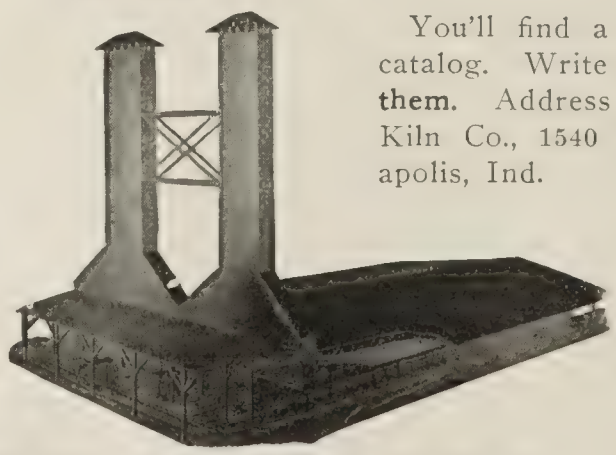
Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.



Over 25 Years of Success

proves that the basic principle of The Standard Natural Draft Steam Drier is correct. As to its perfect adaptability to suit **clays of all natures,** ask any Standard Drier user.



You'll find a list of users in our catalog. Write for it—then write to **them.** Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

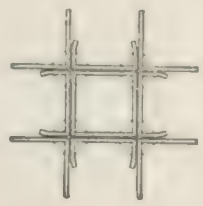


Track Equipment

FROGS, SWITCHES, SWITCH STANDS, PORTABLE TRACK

ASK FOR CATALOG C

The Cincinnati Frog & Switch Co., Cincinnati, Ohio



Build with Brick

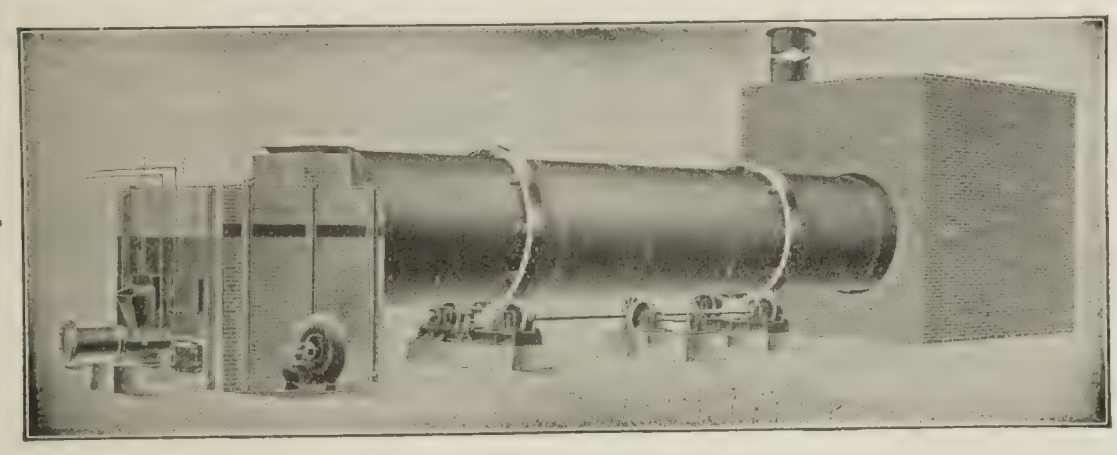
Sheet Steel Signs

$5.00 per hundred

Write for prices of signs with your name imprinted

BRICK & CLAY RECORD
445 Plymouth Ct., Chicago

Build with Brick



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

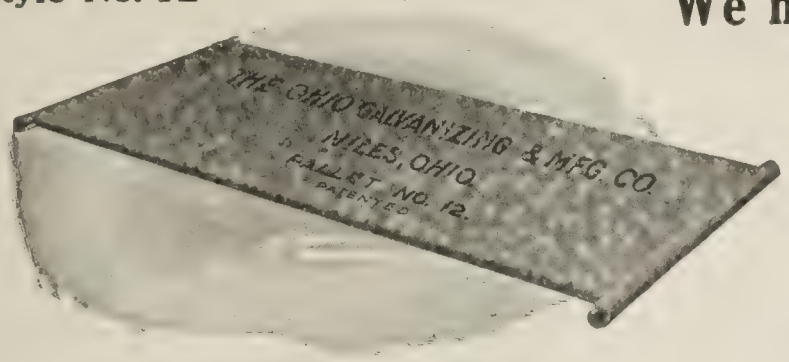
It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street
NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.
Niles, Ohio

Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations $5.00 Post Free

THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

"BRICK AND CLAY RECORD"
445 Plymouth Court, Chicago

THE CHASE DRYER CARS

With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*

The Chase Fdry. & Mfg. Company

Columbus, Ohio





OSGOOD

"18" ¾-yd. Traction Revolving Shovel with independent steam steering engine, also combination hand steering operated from either side of shovel.

The Marion-Osgood Company

Marion, Ohio, U. S. A.

Eastern Office: 51 State Street, Albany, N Y.

Chicago Agency: The M-C-B Co., McCormick Bldg. Phone Har. 6365.

New York Agency: M. E. Davis, 1682, 50 Church St.

Philadelphia Agency: J. M. Reed Co., Inc., 516 Commercial Trust Bldg.

STEAM SHOVELS **DIPPER DREDGES**

Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

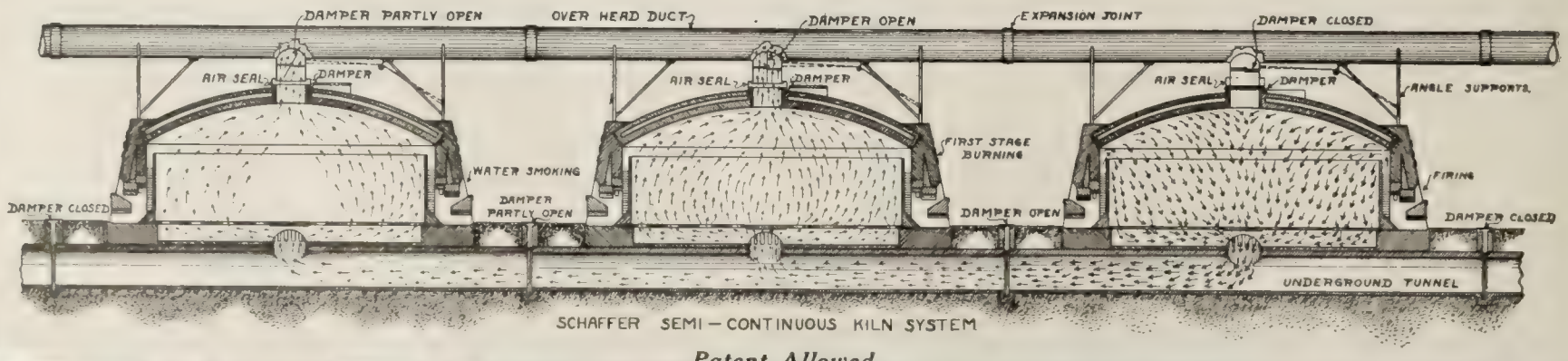
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



Patent Allowed

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

Refer to the Following Pages

Form the unselfish habit of stepping out of your way once in awhile to say a favorable word for everything that is made of burned clay. Wherever burned clay gets a hold—no matter if it is or is not YOUR product, you receive a DIRECT benefit, for the buying public soon learns that if it is a material worth while using in one way it is worth while using in others.

These Pages Contain the Cards of Clay Product Manufacturers

The product they manufacture also is given. Look them over and get acquainted with your brother clayworkers—some day you may get the opportunity to say a good word for them.

Suppose in your home town or county there are to be street or highway improvements. When you get the tip, turn to these pages, if you do not make pavers, and finding the paving brick plant nearest to you, send it the tip. That manufacturer will get a representative on the ground and your information may mean a permanent, durable brick pavement to which you can point with pride and at the same time feel that it stands as a lasting monument to burned clay—YOUR material.

Suppose you are not a tilemaker and ascertain that some farmer is going to buy a quantity of tile, and because there is no convenient tilemaker in the vicinity or the concrete man is active, he considers concrete. Tip off the nearest tilemaker, for every foot of clay tile that goes into the soil around you is a lasting monument to burned clay—YOUR material.

Suppose you are a brick manufacturer and you learn that some one in your vicinity is going to build a furnace that will require a fire-resisting material. Look at the pages of advertising that the refractories carry in this magazine and tip off the nearest one.

Suppose that every clayworker—the tilemaker, the sewer pipe manufacturer, the face brick and common brick manufacturer, the paving block manufacturer, the hollow block maker, the potter, the floor and wall tile man—in fact, ANY and ALL the members of the various branches of the great clay product industry—suppose that each and everyone of these were working in a spirit of co-operation as suggested here—what would be the result?

When You Send a Tip to Anyone in the List Tell Them You Saw This Advertisement in "Brick and Clay Record."

Be Generous to Your Fellow Clayworker—Boost

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Queens Run Fire Brick Co.	Lock Haven	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Keller Brick Co., The, Cuyahoga Falls, O..... 15

BRICK (COMMON)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 15
Metropolitan Paving Brick Co., Canton, O..... 8

BRICK (FACE)
Alliance Brick Co., Alliance, O..... 15
Alliance Clay Pro. Co., Alliance, O..... 8
American Enameled Brick & Tile Co., New York, N. Y..... 15
Belden Brick Co., Canton, O..... 11
Bradford Pressed Brick Co., Bradford, Pa..... 11
Hydraulic Press Brick Co., St. Louis, Mo..... 15
Ironclay Brick Co., Columbus, O..... 11
Keller Brick Co., The, Cuyahoga Falls, O..... 15
Kimbell Brick Co., S. S., Chicago, Ill..... 15
McArthur Brick Co., McArthur, O..... 15
Stark Brick Co., Canton, O..... 15

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill..... 6
Brighton Fire Brick Co., New Brighton, Pa..... 6
Chicago Retort & Fire Brick Co., Chicago, Ill..... 4
Davis Fire Brick Co., Oak Hill, O..... 4
Dover Fire Brick Co., Cleveland, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4
Mexico Brick & Fire Clay Co., Mexico, Mo..... 6
Maurer & Son, H., New York City..... 4
Queens Run Fire Brick Co., Lock Haven, Pa..... 4
Jos. Soisosn Fire Brick Co., Bolivar, Pa..... 4
Southern Fire Brick & Clay Co., Chicago..... 6

BRICK OR BLOCK (PAVING)
Alliance Clay Pro. Co., Alliance, O..... 8
Alton Brick Co., Alton, Ill..... 11
Barr Clay Co., Streator, Ill..... 11
Bessemer Limestone Co., Youngstown, O..... 8
Big Four Clay Co., Canton, O..... 8
Carlyle Paving Brick Co., Portsmouth, O..... 9
Clinton Paving Brick Co., Clinton, Ind..... 8
Danville Brick Co., Danville, Ill..... 9
Deckman-Duty Brick Co., Cleveland, O..... 8
Dunn Wire Cut Lug Brick Co., Conneaut, O..... 7
Hamburg Vit. Brick Co., Philadelphia, Pa..... 9
Harris Brick Co., Cincinnati, O..... 8
Hocking Valley Brick Co., Columbus, O..... 12
Mayer Brick Co., C. P., Bridgeport, Pa..... 6
Metropolitan Paving Brick Co., Canton, O..... 8
Murphysboro Paving Brick Co., Murphysboro, Ill..... 6
Nelsonville Brick Co., Nelsonville, O..... 8
Purington Paving Brick Co., Galesburg, Ill..... 9
Shawmut Paving Brick Co., Shawmut, Pa..... 9
Sterling Brick Co., Olean, N. Y..... 6
Terre Haute Vit. Brick Co., Terre Haute, Ind..... 11
United Brick Co., Conneaut, O..... 8

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa..... 6

DEALERS
American Clay & Cement Corp., Rochester, N. Y..... 11
Bonner & Marshall Brick Co., Chicago, Ill..... 11
Kimbell Brick Co., S. S., Chicago, Ill..... 15
Globe Brick Co., East Liverpool, O..... 15

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O..... 8

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill..... 15

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa..... 6
Davis Fire Brick Co., Oak Hill, O..... 4
Evans Clay Mfg. Co., Uhrichsville, O..... 4

SALT GLAZED BRICK
Stark Brick Co., Canton, O..... 15

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O..... 4

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O..... 11

TILE (PROMENADE)
Pittsburgh Tile Mfg. Co., E. Liverpool, O..... 11

TILE (ROOFING)
National Roofing Tile Co., Lima, O..... 11

QUEENS RUN FIRE BRICK

were used in the first anthracite Hot Blast Furnace in America (see Note), built in 1835—almost 80 years ago.

The Quality of our blast furnace, as well as general purpose Brick has been maintained ever since. When in the market address your inquiries to:

QUEENS RUN FIRE BRICK CO., Lock Haven, Pa.

Note: See Rodgers Fourth Annual State Geological Report published in 1840.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

—— MANUFACTURERS OF ——

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. **Cleveland, Ohio**

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

***For* Side Walls**
***For* Crowns**
***For* Fire Arches**
***For* Perforated Bottoms**

Consult us when in market.
We are ready to serve you.

DAVIS FIRE BRICK CO.

OAK HILL, OHIO

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press Bk. Co., St. Louis, Mo.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everhard—Everhard Co., Massillon, O.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hypo—Hebron (Ind.) Clay Pro. Co.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraff—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
M-i-t-u-s-a—Brush-McCoy Pottery Co., Zanesville, Ohio.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Nuyoco—New York Clay Pro. Co., Van Deventers, N. J.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Saraband—Hydraulic-Press Bk. Co., St. Louis, Mo.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.

New Brighton, Pennsylvania

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

The Permanent Way



Permanent if Properly Cared For.
Durable Under any Conditions.
Brick in Pavements is the Most Durable of all Manufactured Materials.
Wire-Cut-Lug Brick is the Most Durable Type of Paving Brick.
Manufactured by 26 Competing Companies operating 42 Plants.

Write to

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

(*Licensors*)

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory:
Zanesville, Ohio

Office:
St. Paul Bldg.
Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

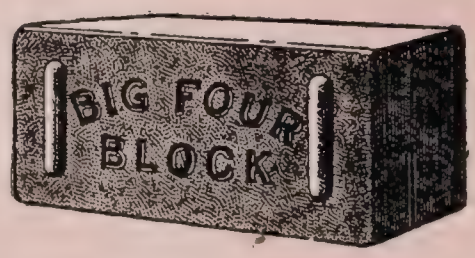
CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

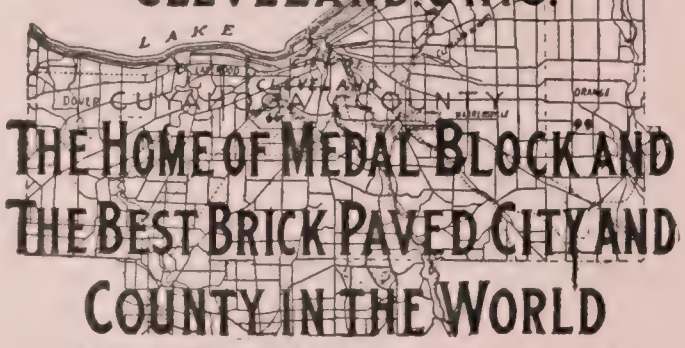
A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.
City National Bank Bldg. Canton, Ohio

THE DECKMAN-DUTY BRICK CO

CLEVELAND OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O. *General Office* Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

Do You Know—

1. That the investment of a comparatively few dollars in brickwork (that is—more brick) will save itself, in insurance premiums, in eight or ten years?

2. That the added security from fire—that is, fire started in your own plant, or that of your neighbor—is "thrown in," free of charge?

Read

"Saving Dollars by Using Brick"

(Sample Copy will be sent for a two-cent stamp)

Then consider whether these facts are a part of the information you would like to have placed in the hands of every architect, every construction engineer, every prospective builder of a residence, warehouse or factory in the community your plant serves.

If so, consider the cost of copies:

100 for $ 4.00	500 for $15.00
1000 for 20.00	2500 for 40.00

It is an eight-page folder—the price is very low for literature that should increase your sales.

Drop a card—today—to

Brick and Clay Record

445 Plymouth Court Chicago, U. S. A.

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

---

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

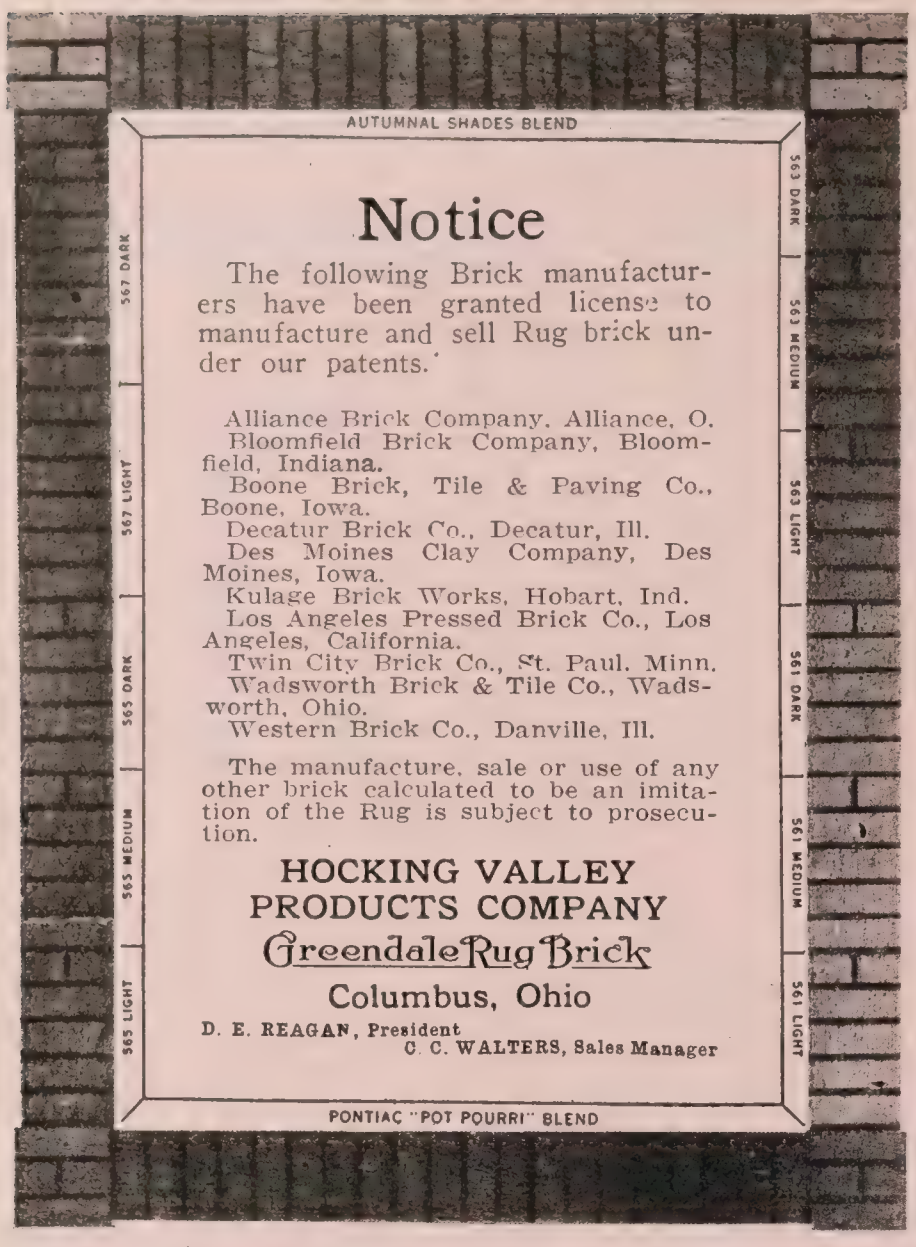
Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)



Notice

The following Brick manufacturers have been granted license to manufacture and sell Rug brick under our patents.

Alliance Brick Company, Alliance, O.
Bloomfield Brick Company, Bloomfield, Indiana.
Boone Brick, Tile & Paving Co., Boone, Iowa.
Decatur Brick Co., Decatur, Ill.
Des Moines Clay Company, Des Moines, Iowa.
Kulage Brick Works, Hobart, Ind.
Los Angeles Pressed Brick Co., Los Angeles, California.
Twin City Brick Co., St. Paul, Minn.
Wadsworth Brick & Tile Co., Wadsworth, Ohio.
Western Brick Co., Danville, Ill.

The manufacture, sale or use of any other brick calculated to be an imitation of the Rug is subject to prosecution.

HOCKING VALLEY PRODUCTS COMPANY
Greendale Rug Brick
Columbus, Ohio
D. E. REAGAN, President
C. C. WALTERS, Sales Manager

The Ironclay
TRADE MARK
FIRE-FLASHED BRICK
VITREOUS
SELF-CLEANING
It washes its own face.

The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

TRADE MARK
Belden Brick
CANTON, OHIO

The Best Face Brick Made
Five Factories—All Colors

The Belden Brick Co.
Canton, Ohio

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick
Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick
Size B.....25c postpaid

Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick
Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost—see Prices Quoted in this Advertisement.

Build with Brick
Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.

Official Directory of

Clay Products Associations

This Directory is published in response to the many inquiries we receive for the names of the officers of the various associations, in order to avoid the delay necessary in writing to us or to them. Any additions or changes of which you know will be appreciated by the Editor.

Alberta Clay Products' Mfrs. Association—J. P. Henry, Pres., Edmonton, Alta.; W. G. Worcester, Sec'y, Calgary, Can.

American Ceramic Society—Richard R. Rice, E. M., Pres., Beaver, Pa.; Edward Orton, Jr., Sec'y, Columbus, Ohio.

American Face Brick Association—Harold W. Holmes, Pres., Detroit, Mich.; R. D. T. Hollowell, Sec'y and Treas., Pittsburgh, Pa.

Ancient Order of Chaldeans—Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago.

Brick Makers Association of Arkansas—M. C. Burke, Pres., Fort Smith, Ark.; C. E. Taylor, Sec'y, Little Rock, Ark.

Building Brick Association—Wm. Hanley, Pres., Bradford, Pa.; H. Jerome Lee, Long Beach Estate Bldg., 42nd St. and Lexington Ave., N. Y. City.

Canadian National Clay Products' Association—J. Edward Frid, Pres., Hamilton, Ont.; Gordon C. Keith, Toronto, Ont.

Chicago Face Brick Association—L. D. Binyon, Pres., Chicago; Jno. D. Blount, Sec'y, City Hall Square Bldg., Chicago.

Cleveland Face Brick Association—R. L. Queisser, Sec'y, Cleveland, Ohio.

Detroit Brick Mfrs. & Dealers' Ass'n—W. B. Wreford, Mgr., 2016 Dime Bank Bldg., Detroit, Mich.

Eastern Paving Brick Manufacturers' Association—C. E. Foster, Pres., Bradford, Pa.; G. W. Lenkerd, Sec'y and Treas., Clymer, Pa.

Face Brick Dealers' Association of America—F. Lawson Moores, Pres., Cincinnati, Ohio; R. L. Queisser, Sec'y, Cleveland, O.

Hollow Building Tile Mfrs.' Ass'n of America—J. A. Maahs, Pres., Erie, Pa.; Charles T. Harris, Sec., Cleveland, Ohio.

Illinois Clay Manufacturers' Association—J. L. Buckley, Pres., Aledo, Ill.; A. E. Huckins, Sec'y, Champaign, Ill.

International Clay Products Bureau—Geo. H. Tefft, Sec'y-Treas., Kansas City, Mo.

Interstate Mantel & Tile Dealers' Association—Robert Beck, Pres., Chicago, Ill.; Geo. F. Eubanks, Sec'y, Atlanta, Ga.

Iowa Clay Products Manufacturers' Association—B. C. Keeler, Pres., Mason City, Ia.; C. B. Platt, Sec'y, Van Meter, Iowa.

Iowa State Drainage Association—W. H. Stevenson, Sec'y, Ames, Iowa.

Kansas Society of Clay Manufacturers—Paul Teetor, Sec'y, Lawrence, Kan.

National Brick Manufacturers' Association—C. P. Mayer, Pres., Bridgeville, Pa.; T. A. Randall, Sec'y, Indianapolis, Ind.

National Paving Brick Association—C. J. Deckman, Pres., Cleveland, Ohio; Will P. Blair, Sec'y, Cleveland, O.

National Terra Cotta Society—F. Wagner, Pres., Chicago, Ill.; Wm. D. Gates, Sec'y, Chicago, Ill.

New England Builders' Supply Association—Charles M. Kelly, Pres., Providence, R. I.; F. H. Kingsley, Sec'y, Fall River, Mass.

New Jersey Clayworkers' Association—Chas. A. Bloomfield, Metuchen, N. J.; Pres., Cullen W. Parmelee, Sec'y-Treas., New Brunswick, N. J.

Northwestern Clay Products Manufacturers' Association—T. B. Martin, Pres., Minneapolis, Minn.; L. G. Rose, Sec'y-Treas., Minneapolis, Minn.

Oregon Clay Products Association—W. E. Wilson, Pres., Salem, Ore.; S. Geijsbeek, Sec'y, Portland, Ore.

Pacific Clay Products Publicity Bureau—Frederick C. Davis, Sec'y, Crocker Bldg., San Francisco.

Panama-Pacific Clay Products Association—Herman L. Matz, Pres.; W. P. Varney, Vice-Pres.; Louis F. Desmond, Sec'y, 1211 Chamber of Commerce, Chicago, Ill.; Charles Bonner, Treas.

Paving Brick Publicity Bureau—W. H. Hansen, Sec'y, 1249 Otis Bldg., Chicago, Ill.

Refractories Manufacturers' Association—R. D. Hatton, Pres., St. Louis, Mo.; J. J. Redmond, Sec'y, 400 Chamber of Commerce Bldg., St. Louis, Mo.

Society of Vitrified Clay Manufacturers—J. L. Scott, Pres., Macomb, Ill.; W. H. Bassler, Sec'y, Chicago, Ill.

Texas Brick Manufacturers' Association—C. W. Martin, Pres., Fort Worth, Texas; Thomas R. Harwood, Sec'y, Gonzales, Tex.

United States Potters' Association—P. C. G. Gosser, Pres., Coshocton, Ohio; Chas. F. Goodwin, Sec'y, E. Liverpool, O.

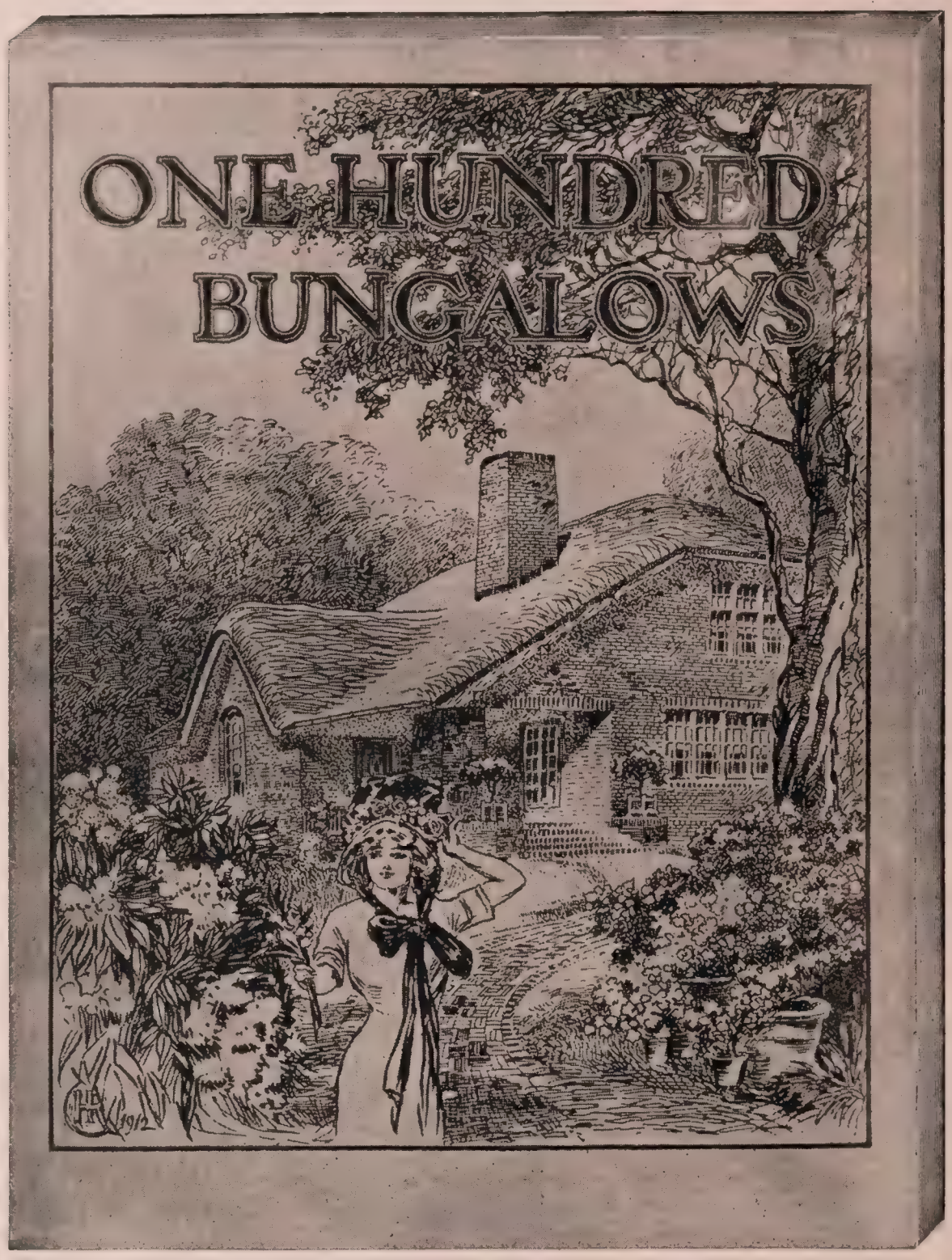
Western Ontario Clayworkers' Association—Walter Clark, Pres., Corunna, Ont.; Alfred Wehlann, Sec'y., Rodney, Ont.

Western Paving Brick Manufacturers' Association—Robt. Nesch, Pres., Pittsburgh, Kan.; G. W. Thurston, Sec'y, Kansas City, Mo.

Wisconsin Clay Manufacturers' Association—A. W. Hilker, Racine, Wis.; Prof. Samuel Weidman, Vice-Pres. and Sec'y, Madison, Wis.

Distribute a Few Copies of This Bungalow Book Among the Prospective Home Builders in Your Community and Watch Your Sales Increase

Help them decide on the style of house they want, by showing them the many beautiful designs contained in the Bungalow Book. They will make your prospective customers appreciate the fact that an attractive and substantial brick home can be built at a reasonable cost.



Price, 50 cents, postpaid

Brick and Clay Record

445 Plymouth Court, Chicago, Ill.

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

L. D. BINYON, President — H. L. MATZ, Vice-President — JAS. A. HOGAN, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Algonquin Face Brick

Is one of the best selling lines of rough texture brick on the market. Colors—red, red center, brown, dark and multi-colors, and also mingled shades.

Representation desired in all new territory

THE ALLIANCE BRICK CO.,
P. O. Box A-1 Alliance, Ohio

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

Modern Brickmaking

By A. B. SEARLE

440 Pages **260 Illustrations** **$5.00 Post Free**

THE NEWEST AND BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

A HANDY BOOK FOR THE PRACTICAL MAN

Many clayworking publications are of such a technical and exhaustive character that they are both uninteresting and unsuitable for the use of a business man. In Mr. Searle's book, however, each question is considered in a manner that maintains interest and he gives the reader just the information needed and no more.

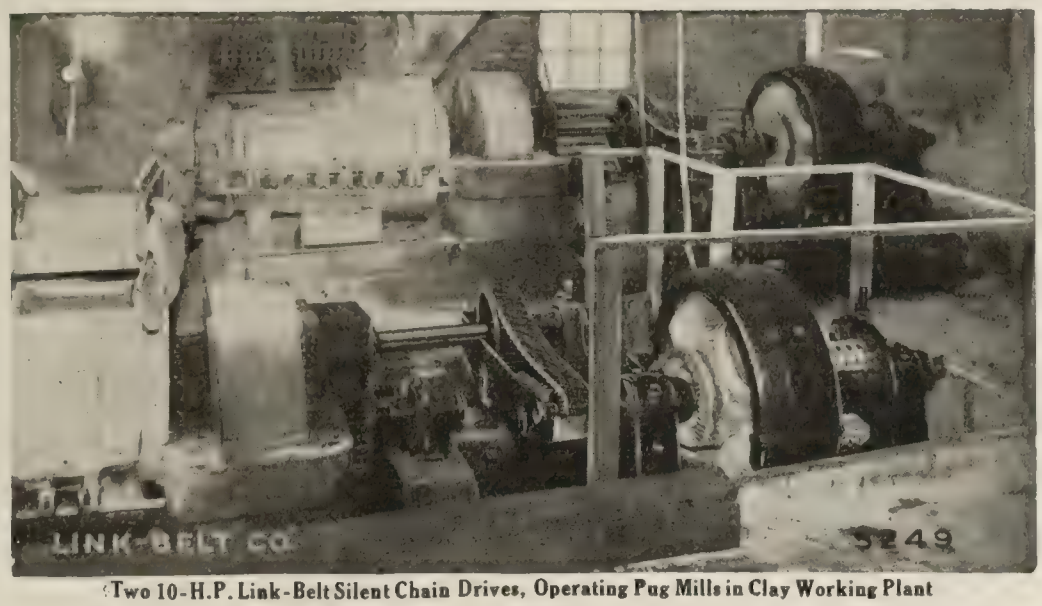
THINGS YOU SHOULD KNOW

CONTENTS.—Preface; Chapter I—The Nature and Selection of Clays—Their Special Suitability for Certain Purposes—The Color and Characteristics of Various Bricks—Sand, Breeze, and other Materials used; Chapter II—The General Manufacture of Bricks; Chapter III—Hand Brickmaking Processes; Chapter IV—Plastic Moulding by Machinery—Wire-cut Bricks—Mixers and Feeders—Expression Rolls—Pugmills, Mouthpiece Presses and Auger Machines—Cutting Tables—Repressers—Dryers; Chapter V—The Stiff-Plastic Process; Chapter VI—The Semi-Dry or Semi-Plastic Process; Chapter VII—The Dry or Dust Process; Chapter VIII—Kilns, Setting and Burning; Chapter IX—Vitrified Bricks for Special Work; Chapter X—Firebricks and Blocks; Chapter XI—Glazed Bricks; Chapter XII—Perforated, Radial and Hollow Bricks and Blocks—Fireproof Flooring; Chapter XIII—Moulded and Ornamental Bricks; Chapter XIV—Drying Raw Clay; Chapter XV—Sources of Difficulty and Loss; Index.

"Brick and Clay Record"

445 Plymouth Court, Chicago

Transmit All the Power to Your Machines with Link-Belt Silent Chain



Two 10-H.P. Link-Belt Silent Chain Drives, Operating Pug Mills in Clay Working Plant

The Drive that is flexible as a belt—positive as a gear, more efficient than either.

The Drive that is quiet and compact.

The Drive that will run forward or backward, fast or slow—that is not affected by heat, cold or moisture.

The Drive that is 98.2 per cent efficient.

Every superintendent should read our 112-page Link-Belt Silent Chair Data Book No. 125. Sent postpaid on request.

LINK-BELT COMPANY

PHILADELPHIA **CHICAGO** **INDIANAPOLIS**

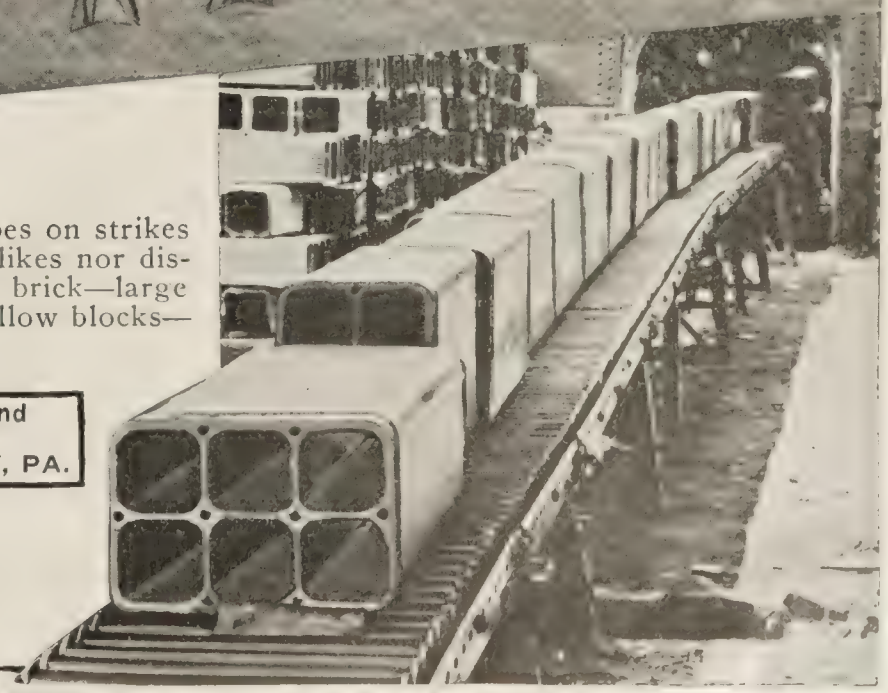
New York	299 Broadway	Montreal, Can	John Millen & Son, Ltd.
Boston	49 Federal Street	Seattle	580 1st Ave., South
Pittsburgh	1501 Park Bldg.	Denver	Lindrooth, Shubart & Co.
St. Louis	Central Nat'l Bank Bldg.	San Francisco	Meese & Gottfried Co.
Buffalo	698 Ellicott Square	New Orleans	Whitney Supply Co.
Detroit	911 Dime Bank Bldg.	Birmingham	General Machinery Co.
Cleveland	Rockefeller Bldg.	Los Angeles	204 N. Los Angeles St.
Minneapolis	Link-Belt Supply Co.		

In Foul Weather or Fair the Mathews

Gravity Brick Conveyer
Is always on the job



It never tires—never shirks—never complains—never goes on strikes—never lays off—always on hand after pay day. It has no likes nor dislikes—will handle rough common brick or smooth face brick—large building units or round drain tile—heavy paving brick or hollow blocks—anything that will run on ball-bearing rollers.



SPEED-THE MATHEWS WAY
MATHEWS GRAVITY CARRIER COMPANY
THE SAVING WAY ECONOMY

Main Office and Factory:
ELLWOOD CITY, PA.

Branch Factories:
TORONTO, ONT.
LONDON, ENG.



THE HOLLOW-TILE HOUSE

By FREDERICK SQUIRES

is a book every prospective home-builder should have. No amount of planning, however extensive, for that new home is complete without considering this new type of building material made from burned clay.

TABLE OF CONTENTS

INTRODUCTION

Chapter I..... Tile-Making
Chapter II.....Old World Stucco
Chapter III.....About Construction
Chapter IV.....Counting the Cost
Chapter V.....The History of the Use of Hollow-Tile for Houses
Chapter VI.....Architects' Tile Houses
Chapter VII.....Building the Other Man's House
Chapter VIII.....Floor Building, Sand Moulds, The T-Beam
Chapter IX.....Tile in Stucco Surfaces
Chapter X.....Tricks of the Trade
Chapter XI.....Tile and Concrete
Chapter XII.....Texture and Scale
Chapter XIII.....The Flat-Roofed House
Chapter XIV.....An Interesting Experiment
Chapter XV.....The House of Three Inventions

This book has 210 pages containing 215 illustrations and figures.

And even if you are living in a perfectly good house and don't intend to build for some time to come, GET THE BOOK ANYWAY, because you will find between its covers a story with just a touch of the romantic about it in the history of hollow tile and the hollow tile house with its European ancestry. It will make good reading for a quiet hour.

But don't treat this matter like the man to whom you have loaned five dollars, treats you. He's always putting you off. The longer you do without this book, the longer you remain in the darkness about a subject you should know all about. DON'T wait until tomorrow. Send in your order TODAY.

Price $2.50 Net

BRICK AND CLAY RECORD

CHICAGO

They Bought a Thew and "Hit the Nail on the Head." They Consider it One of Their Best Moves



Columbus, Ga.

Thew Automatic Shovel Co.,
Lorain, O.

Gentlemen:

We are well pleased with our Thew shovel in every way. It has never been out of running order since we have had it and has never cost anything for repairs. We believe we simply "hit the nail on the head" when we put it in. We consider making the change one of the best moves we have made since we have been in business.

It also may be of interest to you to know that we like your methods of doing business, as all transactions between us go to show that you "Tote Fair." Yours truly,

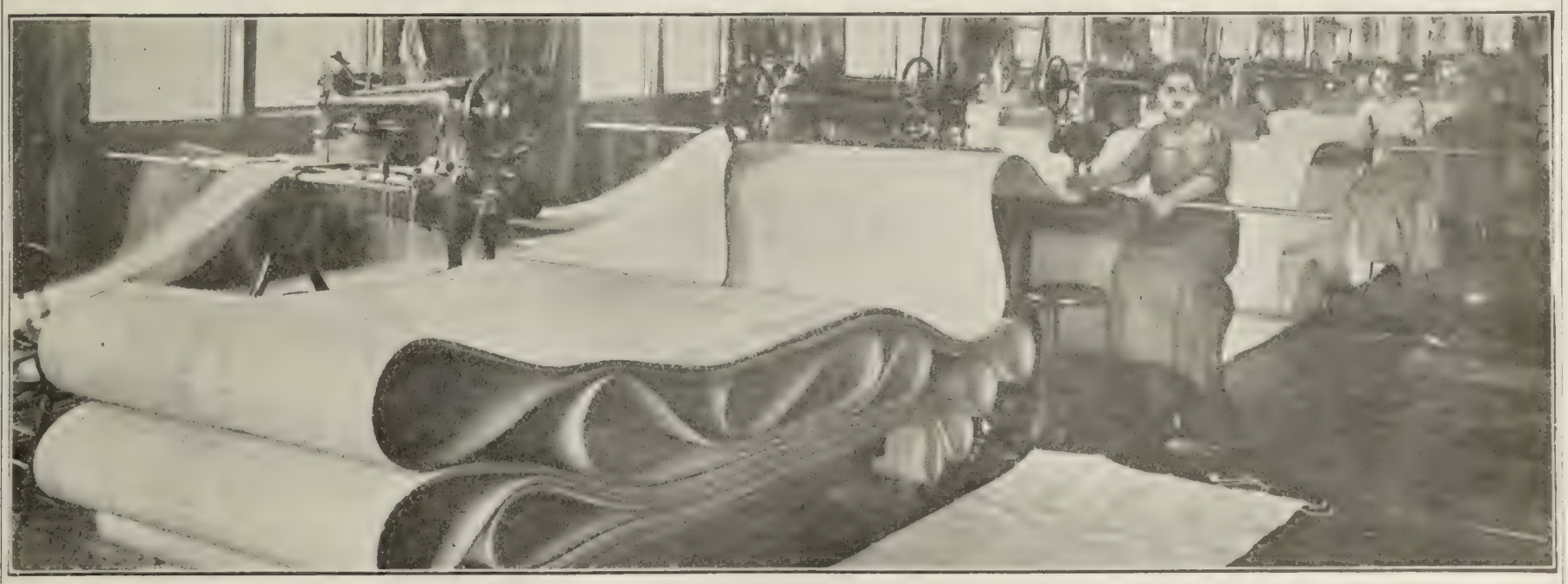
R. B. SMALL,
J. E. Minter, Sec. and Gen. Mgr.

Have You Seen Booklet "A"?

FULL CIRCLE SWING THEW HORIZONTAL CROWDING MOTION ELECTRIC SHOVELS

THE THEW AUTOMATIC SHOVEL CO. LORAIN, OHIO

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.



"Samson Interlocking Tile"

Patented U. S. March 10th, 1910. No. 1,089,507

The 20th Century Building Material

The illustrations only show a few of the many merits of "Samson Tile" which build any desired thickness of wall, and produce *smooth, scored or rough* face.

There is going to be a big demand for a rough Face Texture Tile, for Resident, Factory and all building where tile may be used. *No other* tile possesses the merits of "Samson Tile" for this construction, with its narrow mortar beds and horizontal dead air spaces which the tile form when laid.

A great number of the live wires of the clayworking industry are contracting for territory for the manufacturing and sale of "Samson Tile." Write today or you may be too late. License granted only to responsible firms.

W. W. Smith, Shallow Lake, Ont., Can.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia

In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

Figures with a Punch In 'Em

Here is real selling dope for the BRICK and TILE men.

The most significant comparative costs of frame and Fire-Safe construction compiled since the famous Boston Chamber of Commerce test published by the old B. B. A. several years ago.

The SAFE has just taken bona fide bids from six widely known contractors upon a dwelling house in three types of construction. These types are: all frame, hollow tile and stucco and hollow tile faced with $18 face brick.

It is a convincing argument for the use of fire-safe materials. It should convince the hardest-headed nut in the country that he can't afford to "build to burn."

The average of all bids shows a difference of only 3.6 per cent between frame and stucco and only 7.2 per cent between frame and brick.

The complete plans, specifications and all bids have been multigraphed in book form and we will furnish them in quantities of twenty (20) or more at five (5) cents a copy.

Get a supply of these and go after business with them.

Society Advocating Fire Elimination

The S-A-F-E

356 Leader-News Bldg., Cleveland, Ohio

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—First class experienced man for position as stenographer and clerk to the sales manager of a large sewer pipe manufacturing concern. Answer fully, giving experience and references. Splendid opportunity for properly equipped young man who is willing to begin modestly. Address: 4-BA, care of "Brick and Clay Record." 4-2-1

WANTED—Experienced superintendent for plant manufacturing face brick, paving block and hollow ware. Must be thoroughly practical and machinist, and fully understand brick machinery, burning, also handling of labor. Mention experience and salary wanted. Address: 4-BF, care of "Brick and Clay Record." 4-2-1

WANTED—A superintendent for a small soft-mud brick plant. Must have best of references, and understand Iron Quaker machine, burning, all machinery, mixing of clays, proper sand for molds and must guarantee his work. I will pay the price for the right man. C. E. Castle, Fairfield, Ill. 4-2-1

WANTED—Experienced salesman in sewer pipe, firebrick and face brick. Give reference and salary wanted. Address: 4-BC, care of "Brick and Clay Record." 4-2-1

WANTED — Experienced, practical foreman; fireproofing plant. References. Address: 4-BB, care of "Brick and Clay Record." 4-2-1

SPECIAL OPENING.

OPENING—In Cleveland, one of the greatest, if not the greatest, industrial cities in the world, is an unusual opportunity in a well equipped plant for the manufacturer of a staple article with an increasing demand. To the right man who is capable of systematizing a manufacturing plant we might sell enough stock to double the capacity to increase profits. This concern has no debts; but every dollar is for machinery and working capital. Address: 4-BO, care of "Brick and Clay Record." 4-2-1

WANTED—Gentlemen to invest in a new fire brick plant in the East. Very good fire clay deposit, and in very good market. Address: 4-BX, care of "Brick and Clay Record". 4-2-1

WANTED—POSITIONS.

POSITION WANTED—As superintendent; practical and experienced. Can take entire charge of plants; fire, paving, building and common brick—all processes. Address: 4-BD, care of "Brick and Clay Record." 4-2-1P

WANTED—Position as superintendent of clay drain tile or brick plant by practical man who can produce results. Twenty-five years' experience. Address: A. O. Martin, Lynn, Ind. 3-2-3P.

WANTED—Position as superintendent of brick plant. Experienced in all leading clay lines. Employed, but desire change. Best references. 3-BA, care of "Brick and Clay Record." 3-2-1P.

CLAY WANTED

WANTED—Clay that burns red, suitable for manufacturing flower pots. Must be within easy shipping distance of Chicago. Address. Geo. Keller & Son, 2618 Herndon St., Chicago, Ill. 4-1

EQUIPMENT WANTED.

WANTED—One belt-driven rattler for testing paving brick. Address: 4-BN, care of "Brick and Clay Record". 4-2-1

WANTED—Gravity brick and tile carrier. Hand table for 12-inch tile. Carl W. Stookey, Columbia, Mo. 4-2-1P

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—25,000 daily capacity brick plant in No. 1 condition—now running. Enough wood on yard for season's run. Have never been able to make enough brick to supply the demand. Will give time, and take brick in payment. For further information write: James Thornton, Rudyard, Mich. 4-2-1

FOR SALE—Whole or half interest in one of the best paying brick and tile plants in Washington. This is a new plant, Fate machinery. The farmers have just commenced to use burned clay tile—thousands of acres to be tiled; fine climate. Four-inch tile sold at yard, $25.00. Write and learn more. Address: Star Brick & Tile Plant, Bay View, Wash. 4-2-4

BANKRUPT SALE—A 5-kiln modern brick plant, in Ranson, near Charles Town, Jefferson County, W. Va., with 15 acres of land. This property will be offered for sale at auction within the next 60 days. Watch for large advertisement later. H. V. Sheetz, Trustee, Charles-Town, W. Va. 4-2-1

FOR SALE—Brick, drain and building tile plant. Plenty of clay and red shale deposits in immediate vicinity. Only yard making tile. Owing to partner having other business, sale is necessary. Address: P. O. Box 416, Santa Barbara, Calif. 4-1-P

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—A good brick and tile factory in best city in Central Illinois. No competition. Will sell for one-fourth its worth, cash or terms if taken quick, to close up business settlements. Address: 4-D, care of "Brick and Clay Record". 4-2-P.

FOR SALE—Sand-mold brick plant with 58 acres clay land. Located near Minneapolis, Minn. All newly rebuilt, price $12,500.00. Address: Mrs. W. C. Pike, 602 East 25th St., Minneapolis. Minn. 3-2-3P.

FOR SALE—Soft-mud plant, 30,000 capacity. Only plant in city of 25,000. Address: Bromilaw Brick Co., Alexandria, Va. 3-2-3.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M., Duffield, Mich. 7-2-TF

BARGAINS! BARGAINS!—brickyards and clayworking plants. Any size, anywhere. Our list and services free to buyers. Western Sales Agency, Minneapolis, Minn. 4-2-1P

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR LEASE—FIRE CLAY LAND.

FOR LEASE—We offer a large amount of Kittanning fire clay for lease on royalty basis. Railroad is built through the property. For further information inquire of H. A. Colwell, Kittanning, Pa. 3-2-3P.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—Cheap for cash, machinery manufactured by American Clay Machy. Co., in No. 1 condition: One No. 51 pugmill, $200.00; one Eagle double-mold repress, $175.00; one No. 6 Daisy side-cut brick table, $20.00. B. H. Reed & Bros., Hightstown, N. J. 4-2-1P

FOR SALE—40,000 standard size wooden pallets. William A. Hausman, Allentown, Pa. 4-2-2P.

REVOLVING STEAM SHOVELS
For Sale

Thew No. 1, with 1¼ yd. dipper.
Thew No. 0, with ⅝ yd. dipper.
Bucyrus 18-B, with ⅞ yd. dipper.
Bucyrus 14-B, with ⅝ yd. dipper.
All on traction wheels and in first-class working order.

Wm. B. Grimshaw Co.,
690 Drexel Blvd. Philadelphia, Pa.
3-2-3P.

—
—
—
—
—
—

BARGAIN LIST OF SECOND HAND MACHINERY.

Repaired and Ready for Shipment.

1—150 H. P. Non-Condensing Steam Engine.
2—6 H. P. Upright A B Fan Engines.
15—12 to 15 H. P. Various makes, slide valve steam engines.
10—15 to 35 H. P. Various makes, Gas Engines.
1—54" x 16' Atlas Boiler.
2—36 x 15 A B Ventilating Fans.
1—24 x 12 Pressure Blower.
1—No. 7 Sturtevant Blower.
2—C & A Potts Soft-Mud Brick Machine.
1—Ross-Keller 4 Mould Dry Press Brick Machine.
1—Penfield 6 Mould Dry Press Brick Machine.
1—Raymond Automatic Cutter.
1—Hummer Jr. Fate Brick and Tile Machine, with full set of building block dies.
1—100 M Arbuckle Horizontal Pug Mill.
1—100 M Michigan Horizontal Pug Mill.
2—Second hand Rust Clay Feeders.
1—20 M Kells Brick Machine and cutter.
1—C. & A. Potts Disintegrator, good condition.
1—Bechtels Automatic Side Cutter.

New Machinery at Special Prices.

1—100 M Stiff-Mud Brick Machine.
1— 30 M Stiff-Mud Brick Machine.
1— 20 M Stiff-Mud Brick Machine.
3—25 M Disintegrators.
1— 50 M Disintegrator.
1—100 M Disintegrator.
400—New Brick & Tile Barrows.
10—New Spring Trucks, Complete.
2—Bechtels Automatic End Brick Cutters.
4—Iron Frame Winding Drums.
4—Wood Frame Winding Drums.
3—10' Clay Elevators.

Above machinery offered subject to prior sale at reduced prices.

MARION MACHINE FOUNDRY & SUPPLY CO.
P. O. Box 395. Marion, Indiana.

—
—
—
—
—
—

A FEW OF OUR BARGAINS in first-class, slightly used clayworking machinery:

10 steam engines, all sizes from 5 h.p. vertical to 450 h.p. Corliss.
6 H. T. boilers, 40 to 150 h.p.
12 motors, different makes, from 1 to 125 h.p.
8 steam pumps, 1½ in. to 6 in. discharge.
6 boiler feed pumps.
1 Brewer machine, with dies and cutting table (made only one kiln of tile).
1 9-ft. Frost dry pan, used only 30 days.
1 Ross-Keller 6-mold dry press and disintegrator, excellent condition.
1 Fate smooth roll crusher.
1 Revolving dryer and automatic stoker, 66 in. by 32 ft.
1 American 12 ft. pugmill and one 9 ft. Freese.
2 Dry pans—9 ft. Frost, good as new, and 8 ft. Frost.
1 Freese A Special brick machine with rotary side cutter.
1 Fernholtz clay plow and clay gatherer.
Large stock of pulleys, shafting, belting, pipe, valves and fittings of all kinds.
Two fully equipped brick plants for sale, good locations.
Let us know what you need; we can save you money. Address: Box 494, Clayworkers' Exchange, Springfield, Ill. 3-TF.

Brick and Clay Record Classified Ads Are Result Producers

FOR SALE—One Andrus 4-mold dry press machine that has made only 400,000 brick—practically new. $1,200.00 on car, Memphis. One 5-mold (can be changed to six) Hercules soft-mud machine. One 6-mold Hercules soft-mud machine. Overhauled and in good condition. $250 each on cars, Memphis. One No. 0 late model Thew steam shovel that has been worked about six months and in good condition; $2,300.00 on cars, Memphis. Address: South Memphis Brick Co., Memphis, Tenn. 3-2-TF.

FOR SALE—Practically new, one 40 h.p. and one 60 h.p. high pressure boiler, 100 h.p. slide valve engine, 9 ft. American dry pan, automatic feeder, clay elevator, 8 ft. pugmill, No. 8S Brewer brick and tile machine, Fayets end cutting table, Brewer tile cutting table (10 and 12 inch), board delivery side cutting table, 6-track Standard steam dryer, 102 cars, centrifugal pump with gasoline engine attached, Pulsometer steam pump. W. E. Lyon & Co., Carthage, Ill.

FOR SALE—No. 1 Union brick machine and No. 16 rotary cutter made by E. M. Freese & Co., Galion, O.; replaced with larger capacity of same make. Good for 40,000 brick per day. Price right to move quick. Address: Richlands Brick Corporation, Richlands, Va. 4-3.

FOR SALE—Bensing automatic side-cut brick table, complete with offbearing table. Used for cutting but one kiln of brick. A bargain. New Era gas engine, 40 hp., good as new. 10-A Brewer mill, good as new. Brewer 10 ft. pugmill in first-class condition. Milroy Drain Tile Co., Milroy, Ind. 4-2-1

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

FOR SALE—One end-cut hollow brick die, one side-cut die, one side-cut cutting table; all in good order. Thompson Bros., Windsor, Ont. 4-2-1

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Ross Keller 6-mold dry press and disintegrator. Nearly new. Can be bought for one-fourth original cost. The Shorey-Willis Brick & Supply Co., Cincinnati, O. 3-2-TF.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and ironworking machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—Berg 4-mold dry press. A1 condition, made only 500,000 brick. Also ten special wheel trucks, and new set dies and liners. Price right for quick sale. Address: Richlands Brick Corporation, Richlands, Va. 4-3

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Fogan, Franklin, Pa. 4-TF

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.
M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

Out of a job? Want a foreman?
Want to buy new equipment?
Want to sell your machinery?

ADVERTISE IN

"Brick and Clay Record"

For Results It Has No Equal

PRICES FOR WANT AND FOR SALE ADS

Remittance must accompany the order.
No extra charge for copy of paper containing advertisement

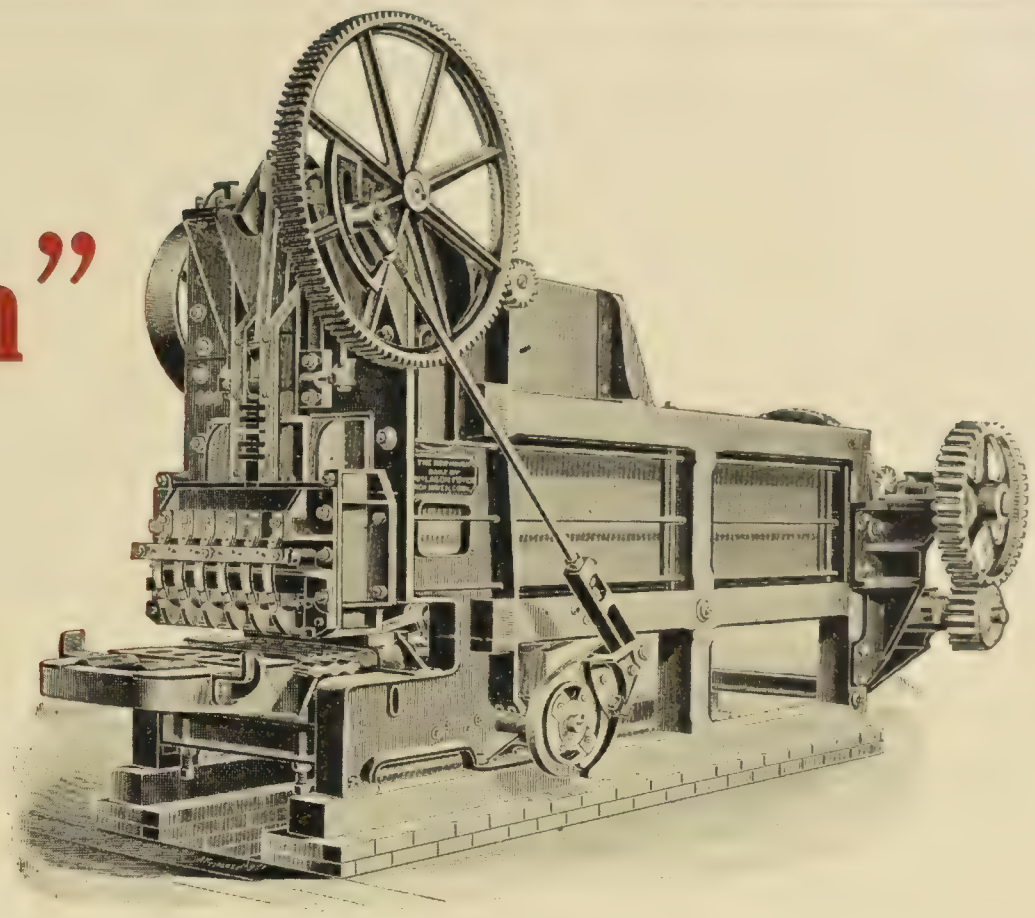
8 cents per word first insertion.
6 cents per word additional insertion.
Minimum charge—$1.00 per insertion.

WE WILL PAY

Twenty-five cents each for copies of November 17, 1914, issue of "Brick and Clay Record". If you wish to dispose of your copy, address a postal to the Subscription Department, at once, advising them to this effect, and the price will be sent you—you to forward the copy by return mail. Only "whole" copies, in good condition, will be accepted.

BRICK AND CLAY RECORD.
445 Plymouth Court, Chicago, Ill.

The "New Haven"



One Million Brick Per Month for Twenty Years—Day in and Out—is An Unusual Record—But Not for the "New Haven!"

In constructing the "NEW HAVEN" we have put in *everything* that makes for *efficiency, quality* and *speed* in turning out Brick. That we have succeeded—ask others—those who have used it for over twenty years and are *still* using it with the best of service and unimpaired efficiency.

The "NEW HAVEN" Soft-Mud Brick Machine is a marvel to do the work that it *does*—to last as long as it *does!*—and satisfy as long as it *does!*

While the "NEW HAVEN" is somewhat higher in price than some others, it is remarkably better in *service.* The repairs that you *don't* have to put into the New Haven offset the difference in price over and over—besides you have a Brickmaking Machine that doesn't have to be watched—all it's got to be is operated—and it will turn out profits as fast as it turns out your brick. Write for prices and complete information. Both will please you.

The Eastern Machinery Company

New Haven, Conn.



Why the New Westinghouse Type CS Is the Best Motor for Brick and Clay Working Plants

FORGED STEEL CONSTRUCTION—Frame and feet are of heavy forged open-hearth steel, thus providing great mechanical strength.

LARGE SHAFT—The shaft is unusually large in diameter. It is made of axle steel, which is 25 per cent stronger than the machinery steel generally used for motor shafts.

RUGGED ROTOR—There is nothing about the rotor that can burn out, work loose, or deteriorate under the heat developed in service.

WINDINGS—Moisture-resisting. Can be supplied waterproof if required.

DUSTPROOF BEARINGS—Ample in size; interchangeable. Motors shipped from stock with dustproof bearings.

NO VENTILATING DUCTS—Low operating temperatures are obtained without ventilating ducts. No danger of burn-outs because of clogged passages.

LARGE AIRGAPS—Larger than those of any other motors on the market. No airgap adjusting devices needed or used.

EASILY REPAIRED—The bearings are the only wearing parts and their natural life is several years. When worn out it is cheaper to renew them than rebabbit them, although this can be easily done if desired. Renewals of all other parts can be easily made in case of accidental damage.

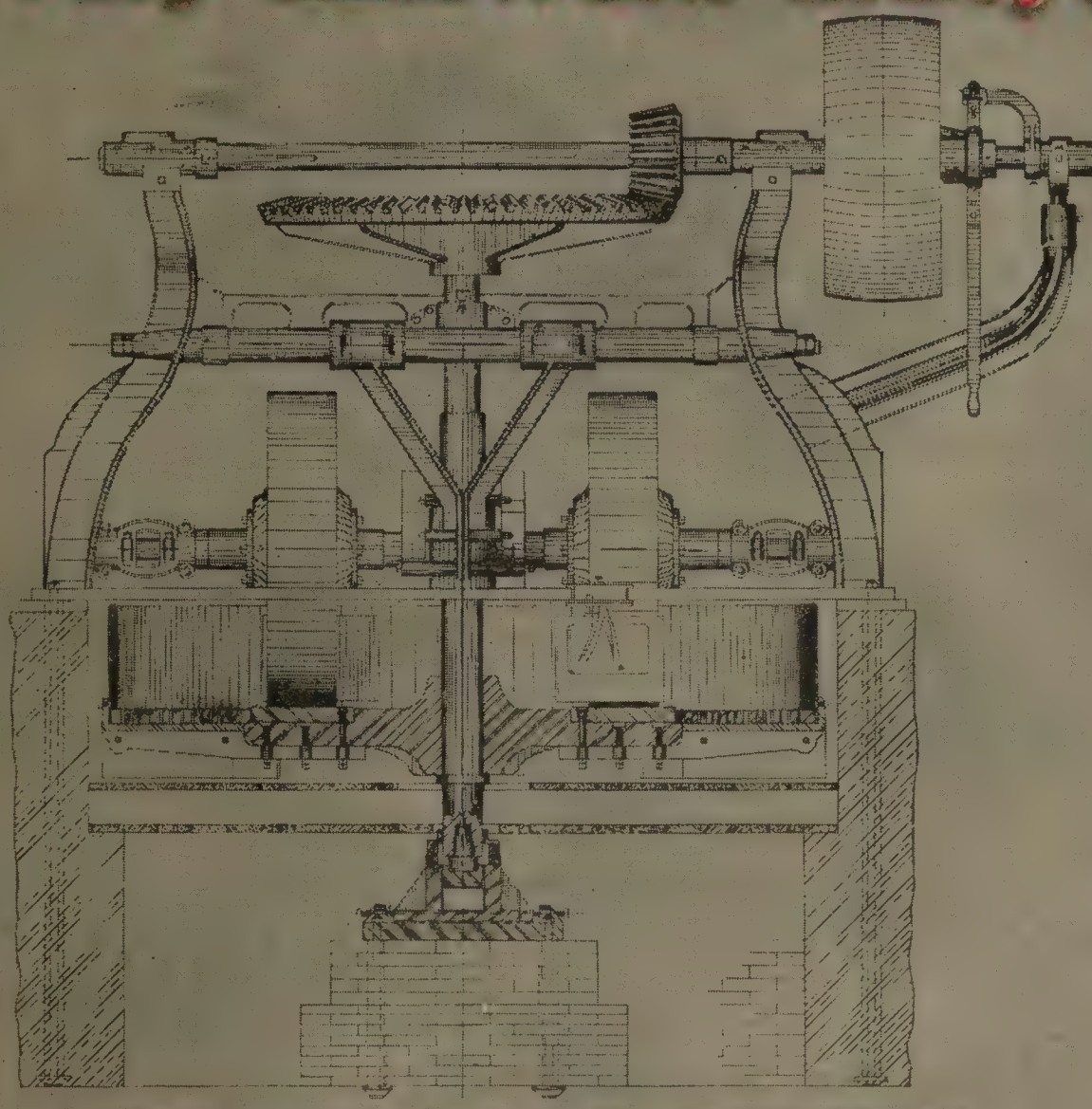
COMPLETE LINE—These motors are made in all commercial sizes and speeds for all commercial polyphase circuits and for all constant speed services, belted, geared or direct connected. Send for full information.

Westinghouse Electric Mfg. Co.

Sales Offices in all Large American Cities — East Pittsburgh, Pa.

BRICK and CLAY RECORD

The Very "Last Word" in Dry Pans



Stevenson's Latest Ten-Foot Model

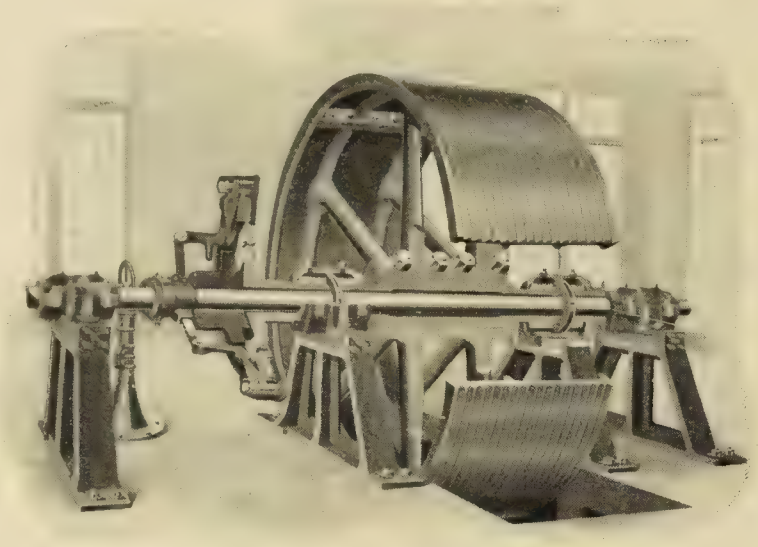
Truly a Wonderful Machine that will increase the efficiency of any clay-working plant more than any other machine that has ever been produced

THE STEVENSON COMPANY, :: WELLSVILLE, OHIO

"In the Heart of the Clay Industry"

Vol. XLVI, No. 9 Chicago May 4, 1915

WELL ER-MADE



Quill Drives

for Heavy Power Transmission

More being used every day because they take the strain off the shaft and save the belts and power.

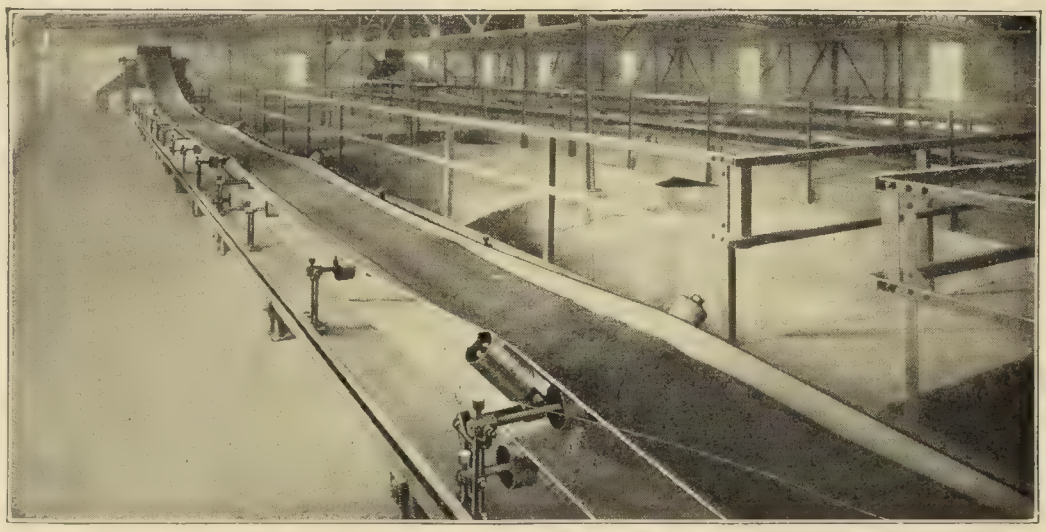
Send for our new Friction Clutch Catalogue J-27

We Build Elevators to Handle Anything

Buckets of every description, from light 2" x 2" tin
up to
Heavy Steel Buckets 84" wide and 36" pitch.

We furnish your complete elevating equipment with steel or wood heads, legs and boots.





Conveying Equipments For Handling Anything

From Crusher Run Shale to Dry Powdered Clay and Grog on to Pugged Clay or Dried or Finished Ware.

We are the People When You Want—

Elevating, Conveying and Transmission Machinery

Have You Our General Catalogue J-20?

Weller Manufacturing Co., Chicago

We Want Every Brickmaker To Read This Announcement Again

Trautwein DRYERS

We have been making a business of constructing Brick Plants and Dryers for years. To do this properly it requires the greatest kind of skill and experience. Having a thorough knowledge of this industry, we are in a position to be of great service to both active and contemplative brick manufacturers. This is demonstrated by the confidence imposed in us by some of the most successful companies in the business.

It might pay you to consult us with reference to your problems. *Let us send you our literature.*

Trautwein Dryer & Engineering Co.

417 South Dearborn St. **CHICAGO**

IN ADDITION

To our **Kiln Construction** work we have added a **Kiln Fixture** department and we are prepared to furnish Kiln Bands, Bars, Vents, Grates, Tools, etc.

Our prices are right. Our materials the best.

Our service is prompt.

Claude Smith Company

Kiln Builders

Plymouth Building, Chicago, Ill.

Service to Clayworkers

Alliance Brick Co.....P- 8
Alliance Clay Pro. Co...P- 5
Alsey Brick & Tile Co..P- 4
Ambursen Co..... 913
American Clay Machy. Co. 897
American Enameled Brick & Tile Co.....P- 8
American Process Co... 909
Arbuckle & Co..... 914
Atlas Car & Mfg. Co... 882

Baird Machine & Mfg... 881
Ball Engine Co. (Erie Steam Shovel)..... 882
Barr Clay Co.....P-7
Barrett Mfg. Co..... 899
Bartlett & Snow Co..... 900
Bessemer Limestone Co..P- 5
Bonnot Co..... 917
Bradford Pressed Bk. Co.P- 7
Brewer & Co., H..... 916
Broderick & Bascom.... 844
Brown Instrument Co... 915
Buckeye Rolling Mill Co. 875

Caldwell Co., W. E..... 874
Canton Grate Co..... 886
Carlyle Paving Bk. Co..P- 6
Ceramic Sup. & Cons... 873
Chambers Bros. Co..... 841
Chase Fdry. & Mfg. Co.. 909
Chicago Bk. Machy. Co. 892
Chicago Retort & Fire Brick Co.....P- 3
Cincinnati Frog & Switch Co. 900
Classified Ads.....922-923
Clearfield Machine Shops 872
Cleveland Alloys Co.... 880
Clinton Metallic Paint Co. 877
Copping Bros..... 872
Cling-Surface Co..... 873
Clinton Paving Bk. Co..P- 5

Danville Brick Co.....P- 6
Davis Fire Brick Co....P- 3
Davenport Loco. Works. 876
Deavitt, H. M..... 872
Deckman-Duty Brick Co.P- 5
Dewey Bros., Inc..... 879
Dover Fire Brick Co....P- 3
DuPont Powder Co.... 878

Engelhard, Chas..... 913
Evans Clay Co.....P- 3

Fate Co., The J. D...924-925
Freese & Co., E. M.... 918

Gandy Belting Co..... 889
General Electric Co.... 843
General Traffic Assn... 874
Gerlock, H. W..... 872
Globe Brick Co.....P- 8
Goodrich Co., B. F..... 894

Hamburg Vit. Bk. Co...P- 6
Hendrick Mfg. Co..... 876
Hetherington & Berner.. 900
Hinde & Dauch Paper Co. 873
Hook Patent Kiln Co... 887

Jackson & Church Co.. 890

Keller Brick Co.....P- 8
Kimbell, S. S., Brick Co.P- 8

Does It Pay?

Not so very long ago I was visiting a clay plant, which was the pride of the proprietor, who thought he knew about all there was to be known concerning the manufacture of clay products.

As we walked through the plant, inspecting every method employed to turn out a good quality of face brick, I noticed that at regular intervals certain of the workmen would stand idle and seem to wait for something to do.

When we went back to the office I inquired about this, and was told that they had tried to figure out some way to overcome the lost motion at that point, but without success. Furthermore, he was appalled when I took a pad and figured out for him the amount he was losing annually because of these intermittent idle periods.

Then—I took out a copy of "Brick and Clay Record" and showed him an advertisement of a machine that would overcome this trouble and which would not cost him any more than the amount he was losing in one year! He had never heard of it, yet he believed himself to be a consistent reader of this publication.

Just try to feel that you have not read your favorite publication aright until you have read the advertisements as well as the editorial columns. In the latter we tell you what to do to make your plant more efficient, while in the advertising columns we show you what to use to accomplish it.

You owe it to yourself to read and absorb the advertisements in every issue. You are bound to be the gainer.

The letter "P" preceding a number refers to the "Pink Section"

Lakewood Engr. Co.... 883
Lehigh Car Wheel & Axle Works 875
Lehigh Port. Cement Co. 880
Link-Belt Co..... 910

Main Belting Co..... 839
Manufacturers Equip. Co. 888
Marion Machine, Fdy. & Supply Co. 886
Marion Steam Shovel Co. 926
Martin Bk. Machine Co.. 885
Martin Grate Co..... 893
Maurer & Son, Henry...P- 3
Mayer Brick Co.....P- 4
McArthur Brick Co....P- 8
Metropolitan Pav. Bk. Co.P- 6
Mexico Bk. & F. Clay Co.P- 4
Mowrystown Brick & Tile Co. 877
Murphysboro Pav. Bk. Co.P- 4
Murray Iron Wks. Co... 875

N. P. B. M. A. 920
National Dry Kiln Co... 891
National Roofing Tile Co.P- 7
Nelsonville Brick Co....P- 5
Nuttall Co., R. D..... 881

Ohio Galv. & Mfg. Co.. 909
Ohio Kiln Co..... 885

Pettigrew Foundry Co.. 877
Phillips & McLaren.... 884
Pittsburgh Tile Mfg. Co.P- 7
Price Electric Co..... 875
Purington Paving Bk. Co.P- 6

Read & Day..... 874
Ricketson Mineral Paint. 872
Roessler & Hasslacher.. 883

Sackett Screen & Chute Co. 879
S. A. F. E. 911
Sawyer Belting Co..... 912
Schaffer Eng. & Eq. Co. 910
Schofield-Burkett 912
Shawmut Paving Bk. Co.P- 6
Smith Co., Claude..... 837
Soisson Fire Bk. Co....P- 3
Southern Fire Bk. & Clay Co. .....P- 4
Specialty Wire Co..... 874
Standard Dry Kiln Co.. 898
Steele & Sons, J. C..... 921
Sterling Brick Co.....P- 4
Stevenson Co. ..Front Cover
Stupakoff Laboratories.. 876

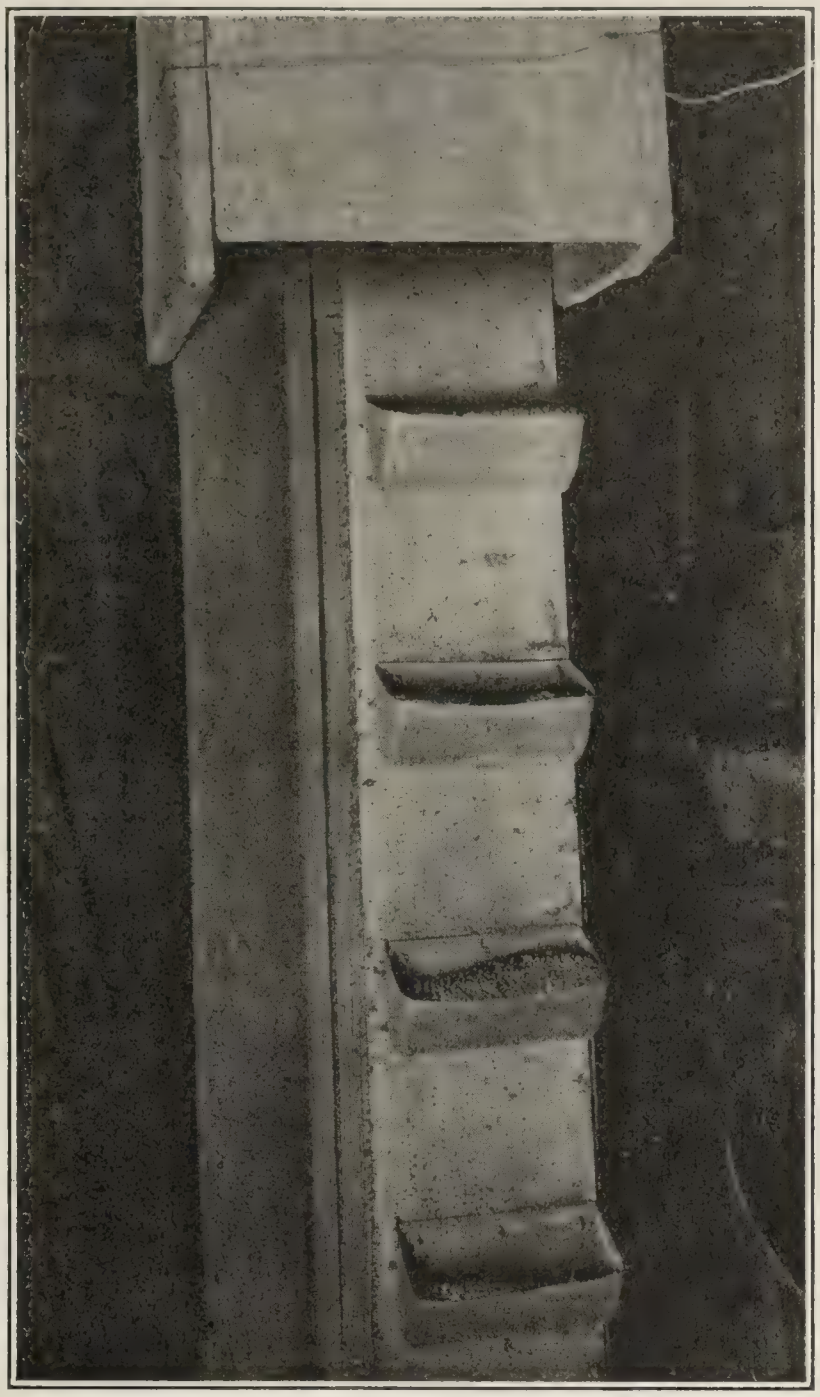
Tecktonius Mfg. Co.... 900
Terre Haute Vit. Bk. Co.P- 7
Thew Auto Shovel Co.. 844
Thwing Instrument Co.. 884
Toronto Fdry. & Mach. Co. 878
Trautwein Dryer & Eng. Co. 837

United Brick Co.....P- 5

Wallace Mfg. Co..... 919
Webb Wire Wks..... 876
Weller Mfg. Co..... 836
Williams & Co., C. K... 872

Zook, G. W..... 872

A CUSTOMER



Sends us the above photograph and says:

"The LEVIATHAN Elevator Belt featured in this picture worked continuously in our plant, elevating hard shale, for more than ten years. Ship us another one, length 74 feet, width 12 inches."

Couldn't you use some belt that would render similar performances? There is only one kind that will do this, and its name is

LEVIATHAN

Sizes from 1 in. to 38 in. in stock, subject to immediate shipment

MAIN BELTING COMPANY

Manufacturers and Engineers

Philadelphia **New York** **Chicago**
Pittsburgh **Seattle** **Birmingham**

Main Belting Co., of Canada, Ltd.
Montreal Toronto

Sent For Booklet No. 2 on Conveying

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)... .....$1.20

Brick Drying (English Edition) $1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth) $3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell) $3.00

Clays: Their Occurrence, Properties and Uses (Ries).. .....$5.00

Clay Glazes and Enamels (Griffen) $5.00

Clays, Tables of Analyses (Crossley) $2.00

Clayworker's Handbook (Searle) $2.00

Economies in Brickyard Construction and Operation (Lovejoy) $1.00

Effect of Heat Upon Clays (Bleininger) $2.00

Engines and Boilers (Watson) $1.00

Engineering for Land Drainage (Elliott) $2.00

Estimating and Contracting (Radford) $2.00

Garage and Motor Boat Houses $2.00

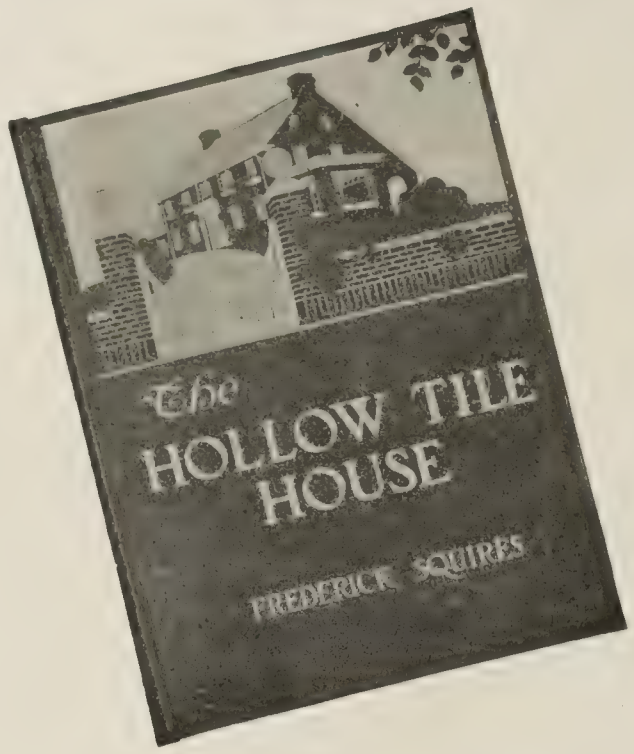
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work $1.50

Hollow Tile House (Squiers). $2.50

How to Analyze Clay (Ashby) $1.00

How to Read Plans (Radford) 50c



210 Pages, 7 1-2x10 inches. 125 Illus.
$2.50 postpaid

A BOOK wherein the reader is introduced to hollow-tile in the making, is told how it is wrought into houses, and is shown how these houses look and from what foreign ancestry their appearance is an heritage.

The book says the last word on the construction of the fireproof home, the most modern development of wall construction in "Texture-Tile," and the most recently devised systems of fireproof wall and floor construction.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester) 75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe) .$1.50

Modern Brickmaking (Searle) $5.00

New Competition (Eddy).... .....$1.50

Notes on Pottery Clays (Fairie) $1.50

Observations on Pottery (Beckwith) 60c

One Hundred Bungalows (BBA) 50c

Pottery (Geo. J. Cox) .$1.25

Practical Brick and Tile Book (Dobson-Hammond) ...$2.40

Practical Farm Drainage (Elliott) $1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill) $2.50

Producer Gas and Gas Producers (Wyer) $4.00

Producer Gas Fired Furnaces (Nagel) $2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard) $4.00

Scumming and Efflorescence (Lovejoy) 50c

Seger's Collected Works (Condensed) $3.50

Sewage Disposal Works: Their Design and Construction (Easdale) $4.00

Sewage Disposal (Fuller).... .....$6.00

Sewers and Drains (Marston) $1.00

Sewer Pipe and How to Make It (Vogt-Turner) 25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler) $2.00

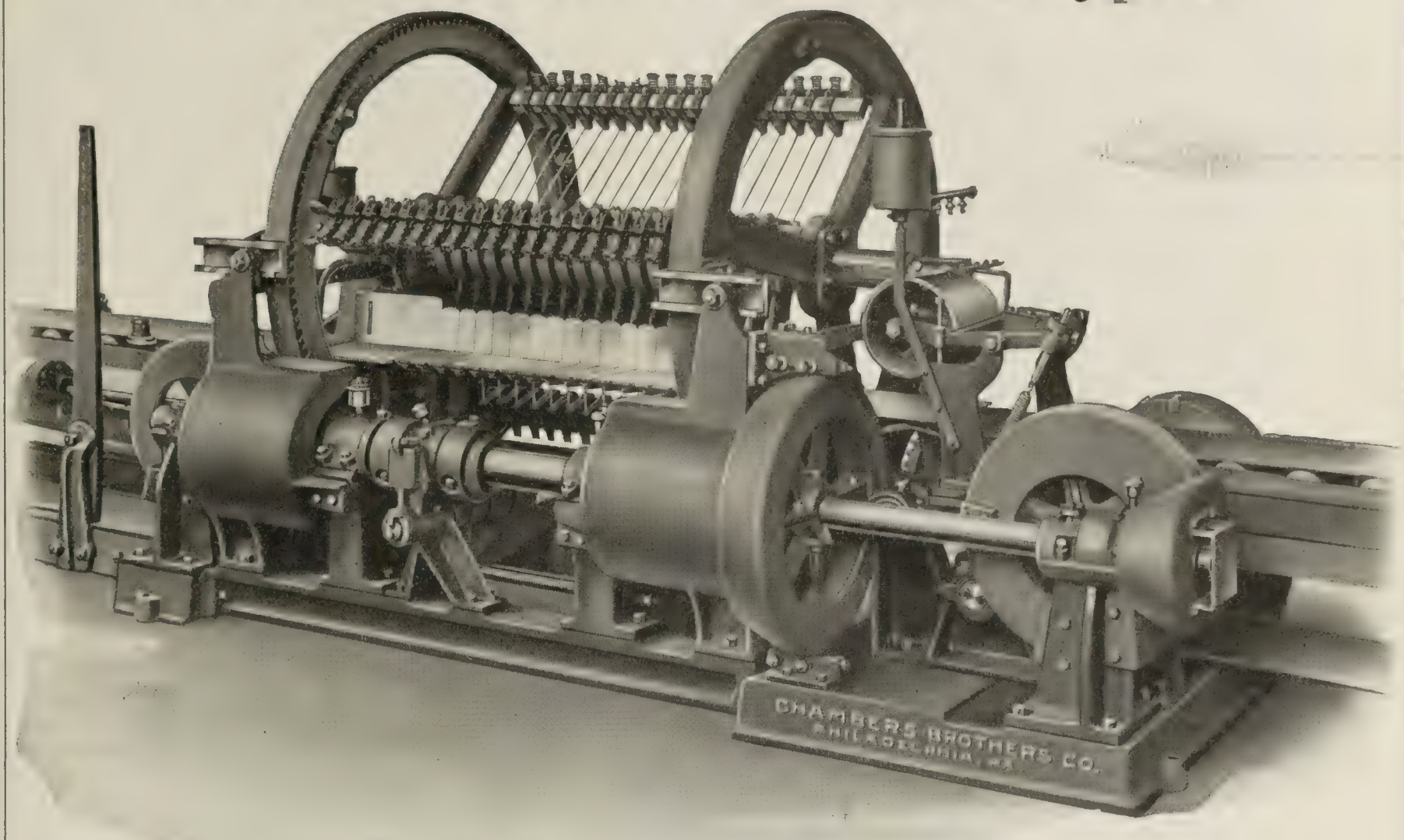
Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

New Multiple Brick Cutter

That Does Not Swell the Clay Bar



Automatic Side Cutter No. 10, Built by

Chambers Brothers Co., Philadelphia, Pa.

A frictional driven Cutter for Brick or Block that starts promptly and stops at completion of its stroke without noise or shock.

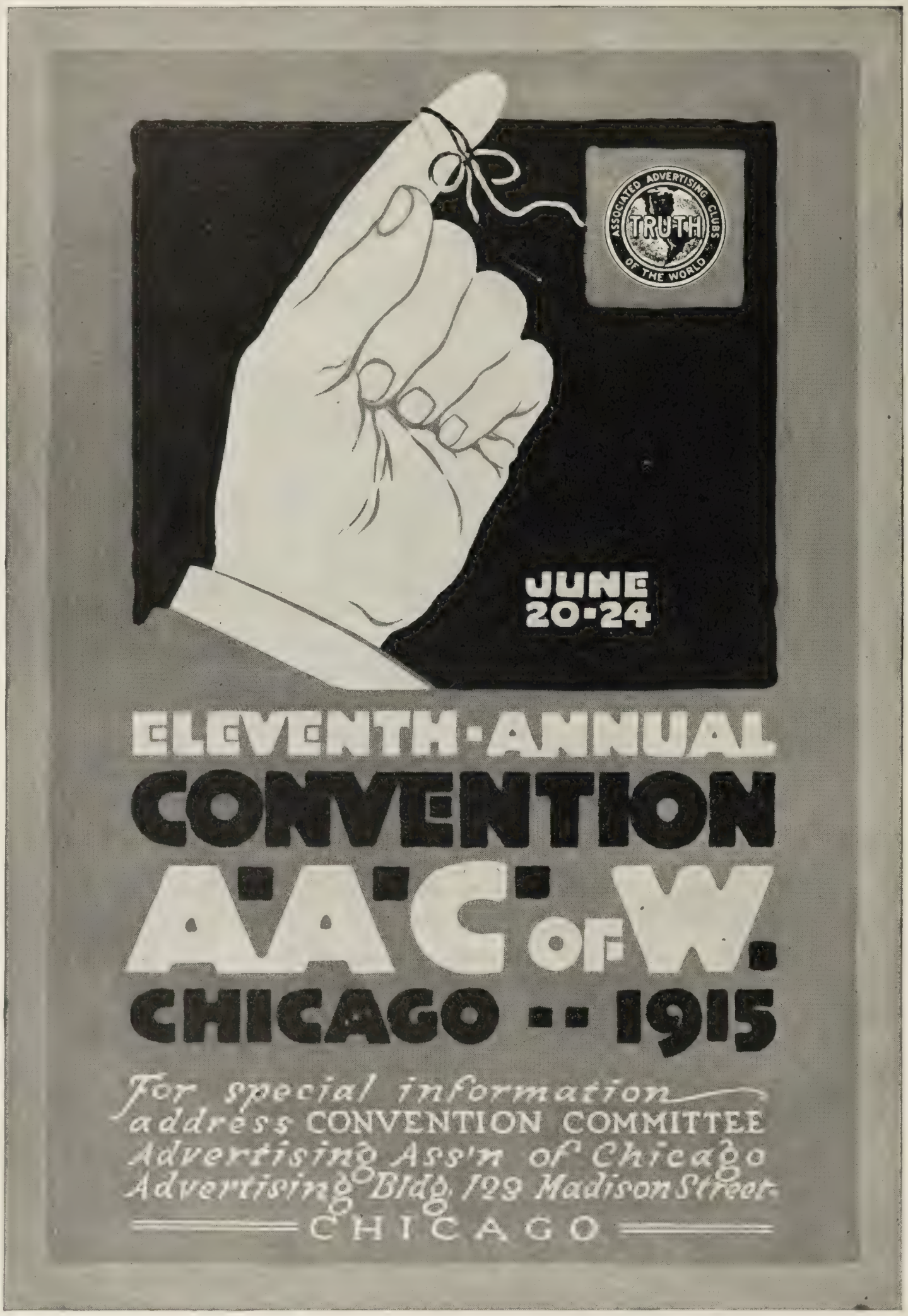
Entirely free from knocker clutches or similar throw out devices.

Driven through an enclosed cone friction of ample diameter and so arranged that the slight lateral movement employed to disengage the friction members upon completion of a cutting strike applies a brake to the entire periphery of the floating member. The result is highly satisfactory.

All revolving parts of the cutting mechanism, together with the platen, are suspended from a stationary steel shaft, the reel hub being upon roller bearings. There is no running machinery beneath the platen, no track or wheels for the support of a carriage, and no parts into which chips can be thrown by the cutting wires. Pressure by one finger will move the cutter endways in either direction.

Observe the enclosure of all gears, not only for their protection, but as safe-guarding against accidents.

Speed-regulating features meet the requirements of machine output and of tender clays. Adjustments to meet various conditions are made without stopping the machine, and are absolutely within control. The underside of clay bar is lubricated by a new method, using only so much lubricant as is required. No slop and no needless waste. A strong, durable, well-built Cutter.


ASSOCIATED ADVERTISING CLUBS OF THE WORLD
TRUTH
JUNE 20-24
ELEVENTH ANNUAL
CONVENTION
A·A·C·W·
OF
CHICAGO ·· 1915
For special information address CONVENTION COMMITTEE
Advertising Ass'n of Chicago
Advertising Bldg. 123 Madison Street
CHICAGO



G-E Motor Driving 12 foot by 5 foot Induction Fan

Arial Tramway Driven by G-E Motor

G-E Motors Driving Clay Shed Elevators, Conveyor and 9 foot Freese Pug Mill

Boone Brick Tile and Paving Company, Boone, Iowa

15% Saved in Cost of Operation Plant Capacity Increased 25%

The Boone Brick, Tile and Paving Company, Boone, Iowa, equipped their 70,000 brick plant with motors manufactured by the General Electric Company.

Represses, brick machine, pulverizer, pug mill, elevator and conveyor, aerial tram, induction fan, exhaust fan, disc fan and pump are all driven by G-E motors.

Before this company installed G-E motors they paid $1.38 per ton for coal. They now purchase electric power for approximately two cents per kilowatt, realizing a saving in cost of operation of about 15% and increasing the capacity of their plant 25%.

Our motor drive experts will be pleased to study your local conditions.

General Electric Company

General Office: Schenectady, N. Y.

ADDRESS NEAREST OFFICE

Atlanta, Ga.	Columbus, Ohio	Kansas City, Mo.	Louisville, Ky.	Minneapolis, Tenn.	Rochester, N. Y.
Baltimore, Md.	Dayton, Ohio	Knoxville, Tenn.	Memphis, Tenn.	Nashville, Tenn.	Salt Lake City, Utah
Birmingham, Ala.	Denver, Colo.	Los Angeles, Cal.	Milwaukee, Wis.	New Haven, Conn.	San Francisco, Cal.
Boston, Mass.	Des Moines, Ia.			New Orleans, La.	St. Louis, Mo.
Buffalo, N. Y.	Detroit, Mich.			New York, N. Y.	Schenectady, N. Y.
Butte, Mont.	(Office of agent)			Niagara Falls, N. Y.	Seattle, Wash.
Charleston, W. Va.	Elmira, N. Y.			Omaha, Neb.	Spokane, Wash.
Charlotte, N. C.	Erie, Pa.			Philadelphia, Pa.	Springfield, Mass.
Chattanooga, Tenn.	Fort Wayne, Ind.			Pittsburgh, Pa.	Syracuse, N. Y.
Chicago, Ill.	Indianapolis, Ind.			Portland, Ore.	Toledo, Ohio
Cincinnati, Ohio	Jacksonville, Fla.			Providence, R. I.	Washington, D. C.
Cleveland, Ohio	Joplin, Mo.			Richmond, Va.	Youngstown, Ohio

For Texas, Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas. El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5244

Motor Agencies in All Large Cities and Towns.

Gravity and One Man

Operate a B & B Tramway

A strong point in favor of the B & B Two-Bucket Tramway System is its great economy.

Only one man is required for its entire operation, and where the grade is sufficient, gravity supplies all the power.



Snow, rain and sleet cannot affect our Tramways—they keep right on working.

Ask our Tramway Engineers to fully explain our Tramway System, as applicable to your plant. It's worth your while to write them—of course, you obligate yourself to nothing.

ASK FOR CATALOG NO. 16

FREE MAGAZINE FOR YOU. If you're a rope user, we want to mail you our illustrated monthly, THE YELLOW STRAND, free for a year. Just write for it.

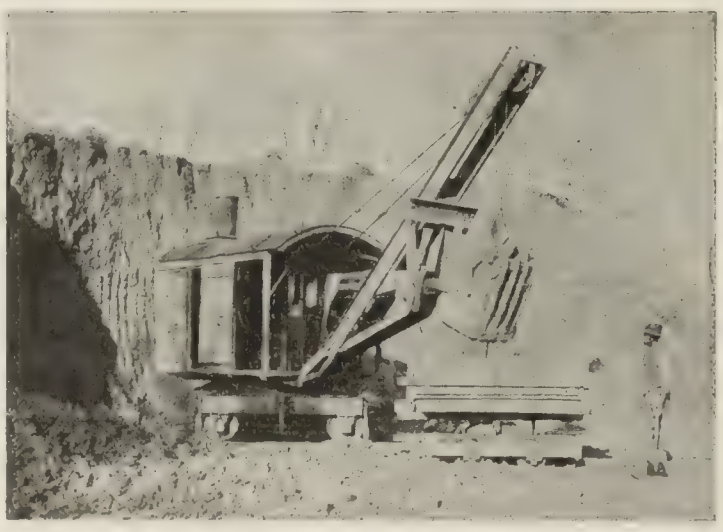
Broderick & Bascom Rope Co.

St. Louis, Mo.

Branches: New York and Seattle. ***Agents: Everywhere.***

Our Seattle Factory enables us to handle Pacific Coast orders with quickest dispatch.

The Smallest Thew Shovel Loads 17 Railroad Gondolas per Day, Saving the Wages of 10 Men



The letter below refers to a shovel of the same size and capacity as the one illustrated.

Corning, N. Y.

Thew Automatic Shovel Co.,
Lorain, O.

Gentlemen:

The type O Thew electric shovel purchased from you is giving us good satisfaction. Last month it cost about 8 mills per day for electricity to load shale.

We are working 10 men in our shale pit and loading 17 railroad gondola cars per day, grading for tracks, blasting ahead, etc.

Our foreman told the writer this morning that if it was not for your electric shovel and drill it would take over 20 men to do the work.

Yours truly,

Brick, Terra Cotta & Tile Co.

This is not unusual, but a typical Thew Result.

Get Booklet A

FULL CIRCLE SWING THEW HORIZONTAL CROWDING MOTION ELECTRIC SHOVELS

THE THEW AUTOMATIC SHOVEL CO. LORAIN, OHIO

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, May 20, 1915

Vol. XLVI No. 9

Table of Contents

An American Kaolin Industry....857
Brick Garages.....862
Seven Test Kilns.....851
Street Paving Economy.....848

The Editor's Corner.....846

Freight Tariffs and Troubles.....865
Letter Box.....867
Machinery and Equipment.....871
Pottery Notes.....890
Questions and Answers.....864
Semi-Monthly Trade Review.....876
The Superintendent.....866
Wake of the News.....878

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

WHEN YOU HAVE SKIMMED the pages of this issue of "Brick and Clay Record" and have settled down to the serious business of reading your trade-paper in the way your trade-paper should be read, you will, in time, arrive at the "Letter Box," which has burst its bounds and spread all over the "Superintendent" and "Question and Answer" departments.

The vital interest of the letters published should carry their every word into your understanding, without the necessity of oiling their progress with illustrations, or large display type, or any of the other arts and graces whereby you are led to stop, look and listen at something that ought to be stamped upon your mentality.

These letters are from the Contributing Editors—for every man is elected to that position, who writes himself into his letters, and, by doing it, makes certain their publication. Unlike editors-in-chief and Associate Editors, these Contributing Editors are not paid for their work, except in the satisfaction of knowing that they are helping those who are on the pay-roll to better earn what they draw.

The reader who misses what these Contriuting Editors have to say, misses the kernel of the nut—the juice of the berry—the smell of the blossom. Their words are untrammeled—neither policy, nor sentiment, nor convention bind them—they have no axe to grind, nor to avoid. Read the "Letter Box" and be thankful that, even in this busy day, men find time to write their trade-paper, pointing out its faults and frailties and praising its work. And then be thankful, all over again, that these men are a part of the same great industry that holds you on its muster-roll.

A Willing Market

A willing market is the first requisite of commercial success. The man who can sell all he can make generally succeeds in securing a good price for what he sells. After that, he looks to his costs, and cuts them, so that he can increase his profits.

A willing market is gained in various ways. One is by supplying it with just what it needs, another way is to create the need within it. The way to keep it willing is to keep the need increasing so fast that the "just-as-good-and-a-little-cheapers" will not be able to catch up to that need.

Increasing the need is done in two ways—service and salesmanship. The first keeps the old need alive, the second brings need children into the world.

A willing market is a growing market. A steady market—one that is not increasing—is becoming unwilling. Just remember that, and ask yourself whether it is your service or your salesmanship that is Oslerizing the need for your product in that locality.

You may, of course, receive some consolation by blaming it on competition, which is the word you use when you mean "cut prices" but want to be polite.

Analyze Your Competition

On the other hand, you may receive something better than consolation, if you analyze what you have called "competition."

Remember, we are talking about a market that was "willing"—that had a need for your product, and paid you the price you asked for it.

On what ground was that competition built—was it entirely the quoting of a price lower than yours? Or was it that you made no effort to secure new customers to take the

The Editor's Corner

place of those that were taken away from you?

If that latter is the case, then you lost the "call" in that market, by poor salesmanship.

If, one by one, those old customers left you, and placed their orders with someone who quoted a lower figure, the while you made little or no effort to stop the stampede, that certainly was poor salesmanship on your part, or (and this is much more likely) good salesmanship on someone's else part.

The reason why men are so easy to deceive, as a rule, is that they get themselves in the habit of being deceived—that is, they deceive themselves.

It is easier to believe that a competitor is cutting his prices than to hire a salesman who can get prices in the face of a lower competitive figure.

It is easier to meet a cut price than it is to hold on until prices get better. It takes two, or more houses, to start a price-war.

Analyze your selling problems. Prescribe the proper medicine to fit each case. Do not, above all, try to cure a sprained sales-ankle by swallowing the cut-price pill every half-hour until relieved.

Keep After Your Sales

A writer in the current number of "Printers' Ink" tells us that very few things are bought nowadays—they have to be sold. A manufacturer may decide not to use salesmen, just as he may decide not to use advertising—but such a man cannot long compete with the live ones who use all means of salesmanship and distribution.

The mere making of a commodity, and the application of cost-finding and cost-reducing methods to that making, in order that a selling-price may be made that will carry the goods greater freight distances, will not expand markets in the modern sense.

The mere perfection of methods that insure prompt and perfect service will not tide the manufacturer over periods of financial depression.

The mere introduction of the product, be that product as perfect as it may be, will not hold that market against the competition of personality and brains, as presented by the silent salesman—which is clever advertising—or intimate salesmanship, which is the impression of the sterling quality of the product by the spoken word.

When a manufacturer spends time and money to get the truth about his goods written in plain, straightforward, sink-in English, his returns will increase.

When a manufacturer has sufficient faith in his product to study the needs of his market, and to apply the results of that study to the increasing of that need, he will find that his "cost-plus-a-fair-profit" price is the price that will bring home the order blank, signed on the dotted line with a name that rates well in Dun and Bradstreet.

And since all buyers are "bears"—a good salesman is worth all he earns.

Make Your Own Prices

Your advertising and your salesmen, like your prices, reflect your own opinion of your product. The public will not believe that the goods are worth more than you ask for them, or that they are any better than you say they are.

Your business is to let the public know how good they are, and then keep them as good as you claim them to be.

Your business is to convince your salesmen that the goods are equal to the printed lines of your advertising.

When you accept an order at less than the figure you first made, you tell your customer that your earlier price was too high.

When you let your customer make your price, you accept his opinion of what your goods are worth.

If he knows more than you do, he ought to be running your plant. That would put you in the great army of the unemployed.

Your sales-problem, which is to keep your plant sold up, and at profitable figures, requires a careful analysis. Are you going to apply that analysis, or wait until the stock sheds are full, the plant idle and the debit figures growing larger with each month's balance sheet?



Main Street, Anderson, Indiana. This pavement was laid in 1892 and is still in good condition with practically no repairs

Street Paving Economy

In Which a City With a Thirty Thousand Population Sets an Example for Larger Municipalities

By M. H. Downey

Resident in Anderson, Indiana, for Twenty Years

THE CITY OF ANDERSON, INDIANA, has a population of about 30,000—owns its water and light plants, both successfully managed—and has a tax rate of but 65 cents per $100 valuation for municipal purposes.

The first brick streets were built in Anderson in 1892. These were the two principal streets, leading north and south and with three cross streets joining them in the uptown district, making a total length of 8,731 ft., containing 44,000 sq. yds. at a cost of $90,889.27.

This total cost includes the cost of curbing, building necessary catch-basins, manholes and other usual changes and additions to existing improvements made necessary in work of this kind.

These streets were made with broken stone foundations 8 in. or 10 in. in depth, well rolled, a two-inch sand or fine gravel cushion and the brick laid with sand filler

On one of these streets, a single-track car line runs the full length, and on the other about three-fourths of its length. This line had been electrified shortly before the streets were paved and the ties and rails used were not so heavy as would now be used. Since that time the interurban service was begun and this traffic, with its heavier cars, has played havoc with the light ties and rails; this has made renewals of track necessary and this work has been anything but beneficial to the paving.

When these streets were constructed, an earnest effort was made to have all connections such as gas, water and sewer made in a proper manner before the pavement was laid; but the two telephone companies with their conduits, the steam-heating mains, the conduit for the cluster lighting system and the street car lines—with all the necessary connections for each and with all appurtenances thereunto belonging—by failure to properly replace the cuts and openings, have served to keep the surface of these streets in a constant state of unrest and have caused them in many places to be anything but pleasant to travel upon.

But with all the upheavals to which these streets have



Ninth Street, Anderson, Indiana

been subject, from street railway, gas, water, sewer, telephone, heat and other construction, they are in fair condition, and any expense for maintenance is not from failure of the street or brick in any particular, but wholly from these outside causes.

During 1914 the brick on one of the most disturbed sections of the oldest streets, approximating 270 sq. yds. were taken up and relaid at a cost of 26 cents per yd. including overhead charges and also including about 20 per cent of new brick. The total cost was $70.20. This cost could be reduced to about 18 or 20 cents per sq. yd. where a yardage of considerable extent is to be relaid.

The foundation course was not reshaped below the sand cushion, but it is the opinion that better results would be obtained by loosening up about two or three inches of the foundation, striking off and rerolling before the sand cushion is put in place.



Eighth Street, Anderson, Indiana

In 1893 the length of brick streets constructed was 12,100 ft., 55,000 sq. yds. at a cost of $150,979.66. This, as before, included curbing, catch-basins, manholes and probable sidewalks. In 1910, 33,917 sq. yds., and in 1911, 19,434 sq. yds. were built.

All of the brick streets of Anderson prior to 1911 were constructed with either broken stone or gravel foundation at a cost for the actual paving, including excavation and the foundation of from $1.20 to $1.65 per sq. yd. Those of 1911 were laid on a 6 in. concrete foundation with grout filler and cost from $1.80 to $2.00 per sq. yd.

Following is a tabular statement showing the total length of streets and alleys paved with brick from 1892 until the present time. In this statement in all cases, curb is included and in most cases sidewalks, also sewer lines, catch-basins, manholes and connections of various kinds, so that it is almost impossible without a great amount of labor to separate these items and arrive at the actual cost of the paving alone. But the prices given above per square yard afford a very close estimate as to cost:

Year.	Length Ft.	Sq. Yds.	Cost.
1892	8,731	44,000	$ 90,889.27
1893	12,108	55,000	150,979.66
1894	446	694	562.18
1895	741	2,200	4,953.75
1896	1,004	3,600	6,723.20
1897	216	336	230.04
1898	1,080	3,700	5,832.00
1899	15,618	46,000	88,377.06
1900	2,571	3,999	5,142.00
1901	16,078	55,000	117,152.78
1902	2,669	5,500	11,428.33
1903	15,611	49,513	120,118.64
1904	1,000	2,978	6,020.00
1905	144	224	298.00
1906	None		
1907	None		
1908	5,516	13,231	25,731.53
1909	None		
1910	9,841	34,722	48,713.65
1911	6,315	21,783	42,228.60
1912	None		
1913	161	251	677.88
1914	None		
Total	99,842	342,731	$726,058.57

In the above summary is included alley paving having a total length of 7,894 ft. with area of 12,279 sq. yds. at a cost of $16,505.10. The charge for the year 1914 for maintenance of our nineteen miles of brick streets is shown to be $97.64. This expense, I am informed by the city officials, is entirely for the repair of places where excavations have been made for connections of various kinds as spoken of above, not a penny of which has been required to be expended for maintenance from any fault of the brick street itself.

From our experience in the matter of paving and from observation of neighboring cities removing their worn out paving surfaces of other kinds and replacing them with brick, to my mind it is an error for a municipality to construct streets and highways from other materials



Tenth Street, Anderson, Indiana

which are yet largely in the experimental stage. The paving where the maintenance charge may become great or reconstruction necessary in a few years is the one that flattens the pocketbook and breaks the heart of the ultimate consumer.

I believe that a majority of our citizens would favor brick paving as being the most serviceable and least expensive in the end.

* * *

The remarkable economy in brick street pavements is shown by the foregoing furnished us by Mr. H. H. Downey, civil engineer of Anderson, Indiana. Mr. Downey informs us that only in the case of one short street were they unfortunate in getting a brick of poor quality.

Two questions are presented impressively from information furnished by Mr. Downey when we consider the relative splendid service the brick streets of Anderson have given.



Ninth Street, Anderson, Indiana



Seventh Street, Anderson, Indiana

What of the service possible in case they had been constructed in an approved modern way with a cement filler?

What of the service, constructed as they were, if they had not been subject to injury by other forces than those of wear and tear of traffic?—Editor.

Prosperity Train's Due.

Prosperity, they say, is on its way. It is more than that —it has arrived.

While low prices for building material still prevail in the East, and the only visible signs of prosperity are seen in the clouds of smoke that pour from the chimneys of the ammunition factories, steel mills and in other industries, the products of which have suddenly come into unwonted demand through the conflict across the seas, taking the country as a whole, there is a marked improvement in business conditions.

Much encouragement is found in the plan filings shown in three or four weeks just past. Chicago has just celebrated a "Prosperity Day," the like of which was never before witnessed in the "I Will" city. This, too, in the face of one of the greatest labor difficulties on record.

The writer has just returned from a trip through Iowa and finds there much cause for encouragement. This spring the farmers are plowing up and planting more land than ever before. Fields sown with wheat and oats are everywhere in evidence and from the railroads may be seen mile after mile of farm lands under cultivation. Here and there is a man holding a plow or riding on it as the case may be, or driving two teams of horses drawing a discer preparing the seed bed for a bumper crop of corn. With favorable weather conditions and careful farming, Iowa promises to be a food producing center in the world during Nineteen-Fifteen—the year of promise.

Rural prosperity means good times for the clayworker who is alive to the situation and most of the Iowa clayworkers have their eyes wide open. April has brought a business in burned clay products, the like of which has not been seen for many months. Clay plants are working to capacity, while great stock piles are being leveled by the onslaught of shipping orders.

Stop! Look!! Listen!!!

And this is only the beginning of a record business for clay products on the farm. It must be remembered that most of the farmers are busy, just now, getting their corn in and that they will not stop to give attention to anything else. This makes the present activity in drain tile, silo block and other burned clay products all the more wonderful. Before we are well into the "merrie month of May" the Iowa plants will be enjoying, it is predicted, the largest business that has ever come to them at this season of the year.

Indications point to a record consumption for drain tile in the Hawkeye state and it is more than probable that many plants will be taxed to the limit to supply the necessary material for farm improvement.

Iowa is not alone, however, in its agricultural activity. Everywhere, the man with a piece of ground is preparing to work it to its utmost, in anticipation of an abnormal demand for farm products.

Efficiency—the stopping of waste—is the slogan of a host of progressive farmers and in order to make their farms efficient, many of them have turned to burned clay products to increase their crops through drainage and to preserve their corn for silage.

With this comes the thought of housing their animals and themselves in more permanent, more fireproof and more sanitary buildings than those which have been erected in the past.

Buy it Now

Don't wait until the June roses are in bloom before you start your advertising campaign. Do your part in bringing prosperity to the clayworking business by telling your friends and neighbors that they should "Build Now and Save."

Seven Test Kilns

With Detail Drawings Showing Their Construction and Descriptive Matter as to Their Successful Operation

By Ray Thos. Stull, E. M. and Ralph Kent Hursh

APPARATUS for testing clay, the results from which will closely approximate the behavior of the material under practical working conditions, are becoming more and more of a necessity on every clayworking plant. The following paper, which was published in the form of a bulletin by the University of Illinois, answers so many of the questions that have been asked "Brick and Clay Record" as to the practicability of test kilns, that it is now republished for benefit of our readers.

IN PRESENTING THE DESIGNS of these test kilns, no claims are made to original ideas. In the design of each kiln, an attempt has been made to combine well-known principles in such a manner as to best meet the conditious and requirements which the kiln is to meet.

All flues leading from the kilns are placed under the floor.

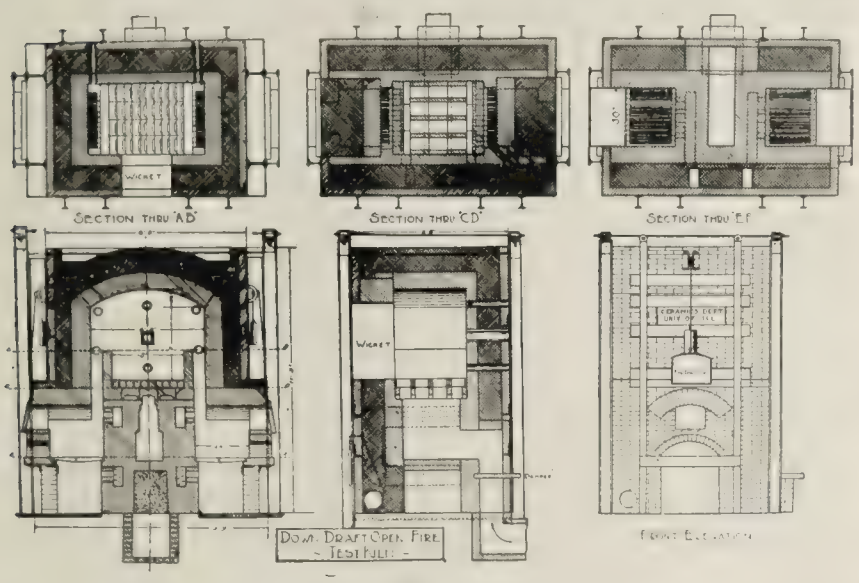


Fig. 1.

These connect with two main flues 15 in. wide by 30 in. deep, which in turn connect with a 60 ft. stack. Kiln represented by Figs. 1 and 2 is of the down-draft, open fire type, provided with two fire boxes. The fire boxes are short and wide, facilitating easy cleaning and prolonged life of grate bars. The kiln is provided with a flue system so that forced draft may be applied either above or below the grates. The kiln has been in use over two years and has been fired repeatedly to cone 16. It has a surplus of draft so that it has not been necessary to use forced draft to reach high temperatures.

In Figs. 3 and 4 is shown a rectanglar down-draft muffle kiln. The muffle is 2 ft. by 3 ft. and 3 ft. to the spring. The muffle walls are laid with hollow blocks beveled at the corners in order to give greater radiation surface. The same size and style of fire box is used in this kiln as in the former one. The kiln has been burned to cone 8 in twelve hours. After two years of use, it is in excellent condition.

Figures 5 and 6 represent a round down-draft open fire kiln. Fuel oil, delivered to the kiln under 5 lbs. pressure, and air at 2 lbs. are used in firing. The four burners lead tangentially into a combustion ring. The fire gases pass up over a circular flash wall and down through the perforated floor.

The crown is removable and is raised and lowered by a three-ton chain hoist, running on a track. This arrangement permits of easy and quick setting and eliminates the troublesome cold doorway. The temperature and kiln atmosphere can be governed very closely. The kiln has been in use for more than a year. Although it is capable of attaining very high temperatures, there has been no occasion to fire it above cone 8. This temperature has been attained with only two burners in use.

Figures 7 and 8: Open fire, down-draft kiln: The kiln is fired by gas and compressed air, both being preheated in coils of wrought iron pipe suspended in the out-going flue.

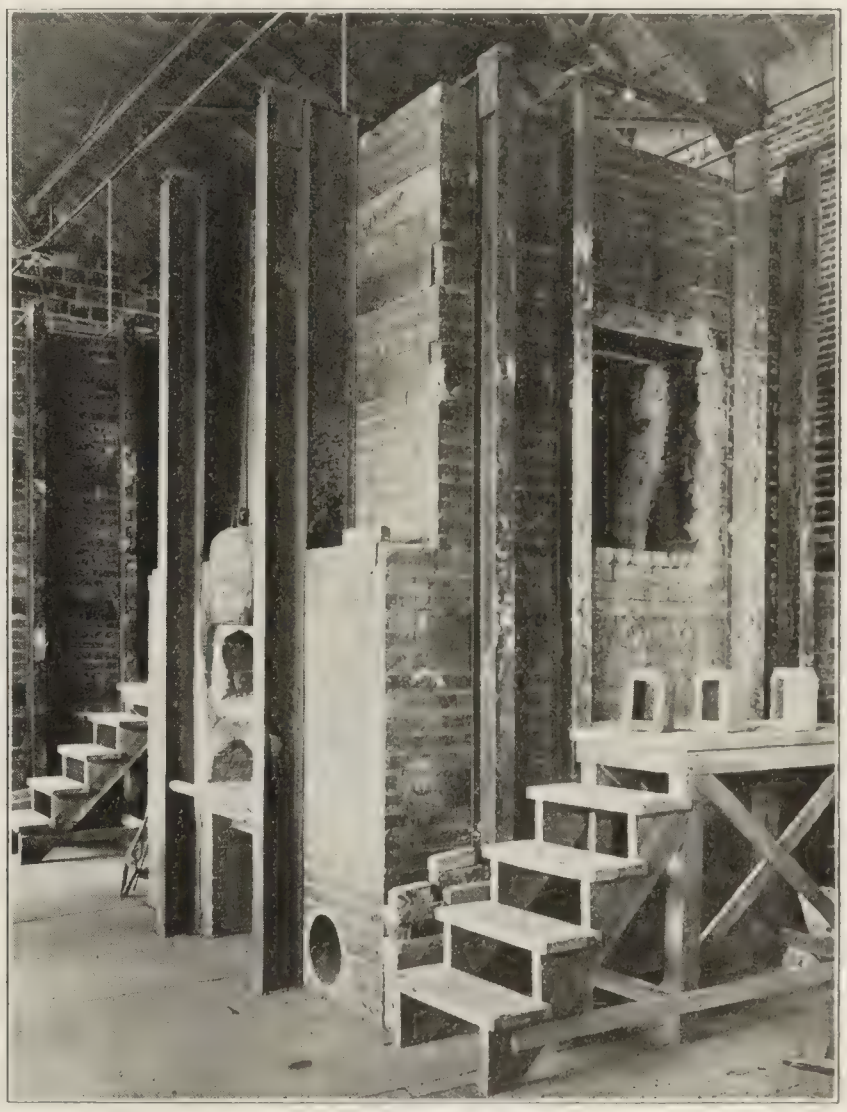


Fig. 2.

The flue is provided with an opening just below the damper. Through this, air can be admitted in order to prevent overheating of the coils. The kiln is fired by ten burners made from ordinary pipe fittings. Each burner is about the size of an ordinary Bunsen blast lamp. The kiln has been fired to cone 14 in six hours.

The setting chamber is 12 in. by 22 in. by 9 in. to the spring, and 4 in. rise. The kiln is especially adapted to clay testing.

Two plugs in the crown, one in the back and one in the wicket, are provided for drawing trials.

Figure 9: Battery of three calcining kilns: Each unit is fired by fuel oil and compressed air. The combustion chamber at the top is cylindrical in form, the flame entering tangentially. Each unit is provided with two calcining chambers. The kilns are designed especially for burning small batches of Portland cement, and for calcining clays and dry colors. The material to be calcined may be placed on the bottom plate of the chamber or in covered flat tile saggers.

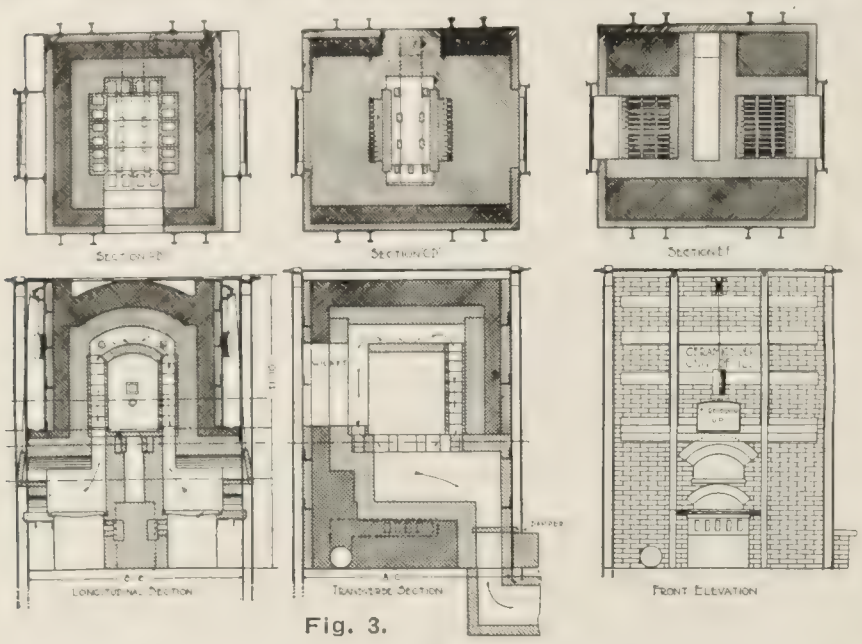


Fig. 3.



Fig. 4.

Figure 10: Twin muffle kiln: The kiln was designed especially for firing enamels for metals and overglaze colors. Each muffle is heated by two gas burners, the air being preheated in the recuperator below the muffle. The gas passes

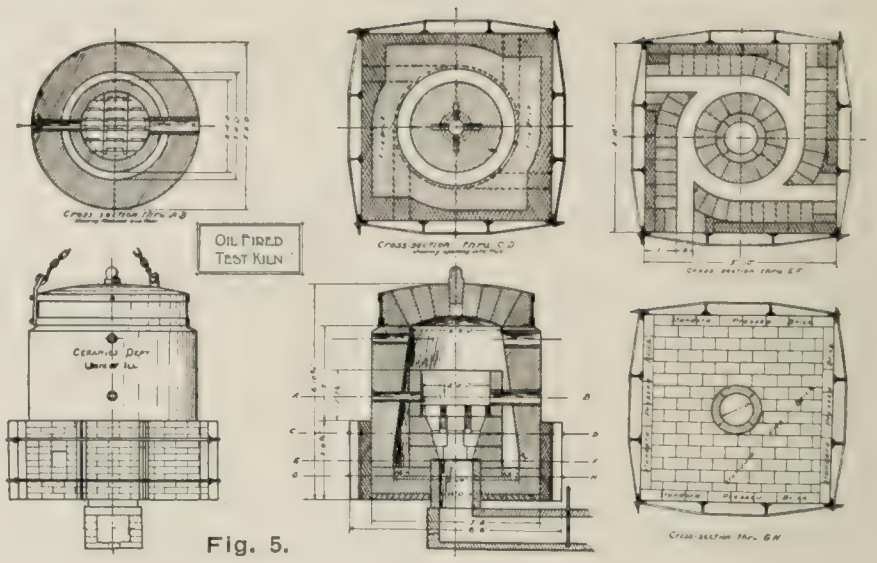


Fig. 5.

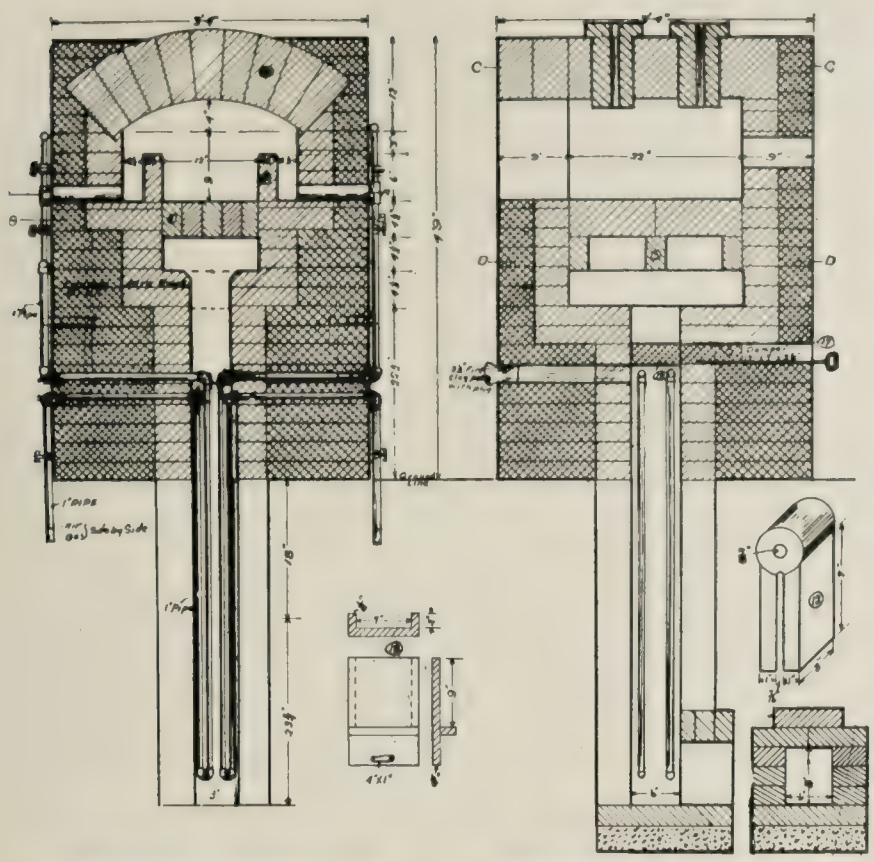
in horizontally and meets the air coming up from the recuperator. The flame passes back to the opposite end of the muffle then turns and passes twice around the muffle to the center and down into the recuperator. The hottest parts of the flames from the two burners applied to each muffle, moving in opposite directions, encircle the muffle ends first, then



Fig. 6.

encircle the middle, thereby neutralizing the "cold end" effect and giving a more uniform muffle temperature.

Figure 11: Battery of four drop-frit furnaces: Each furnace is fired by two small gas burners made from pipe fittings. The gas and air are preheated in wrought iron pipe coils placed in the outgoing flue. The flames pass into the combustion ring tangentially, then pass over a flash ring and down around the crucible. The frit pan underneath, when filled with water, forms a "water seal." The bottom of the pan is curved so that the frit can be raked out, making it unnecessary to remove the pan. The principal objection in the construction of the furnace is that the frit pan is too close



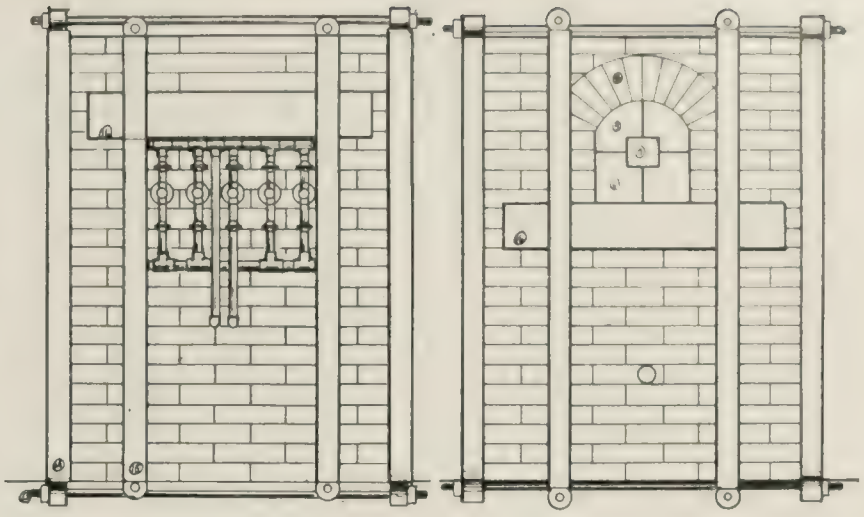
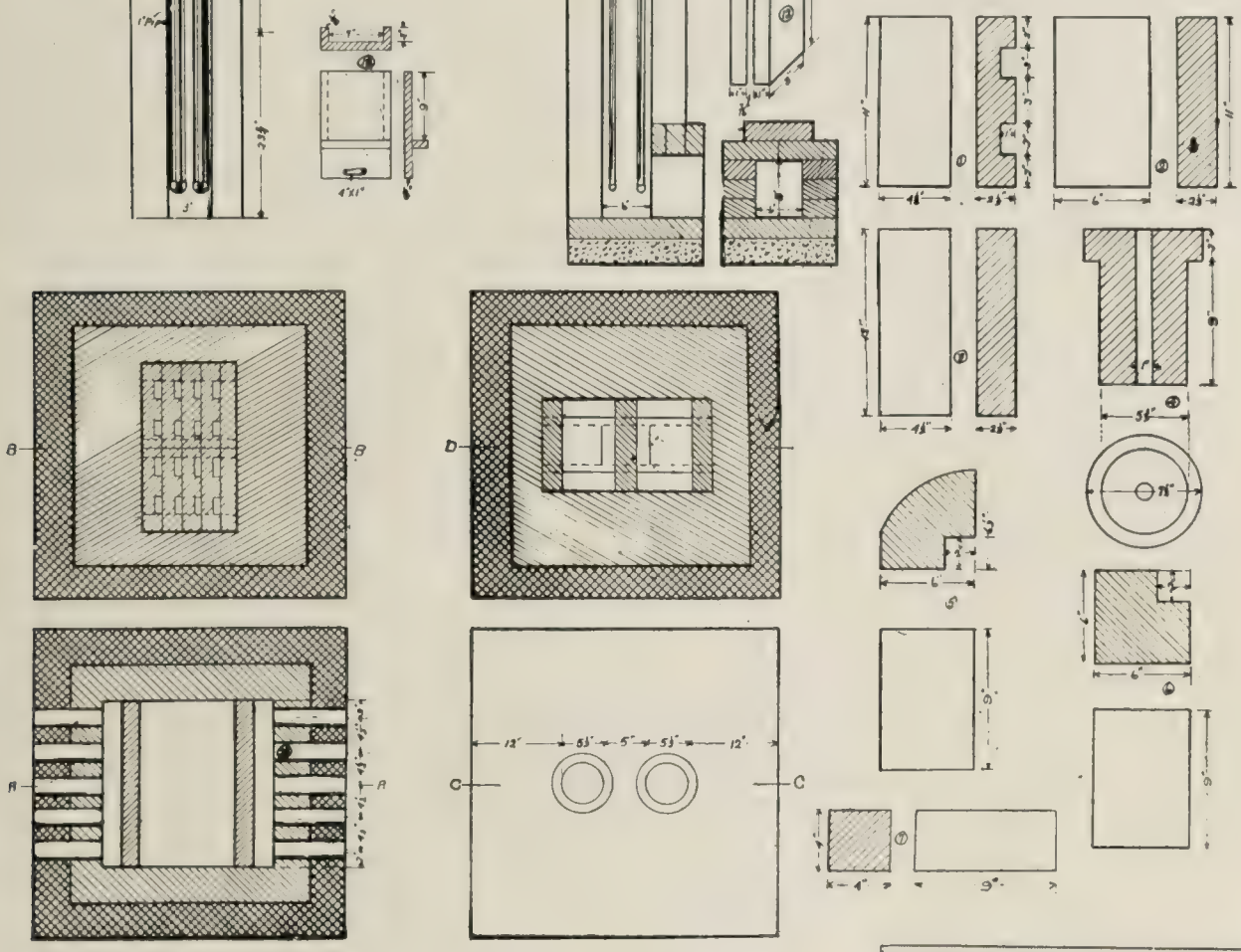
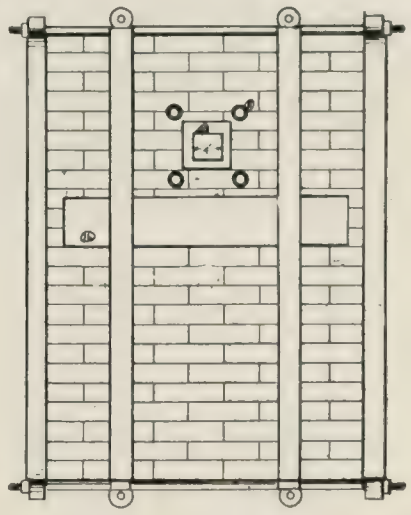


Fig. 7.





No.	Name	Dimension	Req.
A	Floor Brick	See Details	14
B	Bag wall	" "	1
C	Feather wall	" "	3
D	Flue	" "	2
E	Dust Block	" "	2
F	"	" "	1
G	"	" "	2
H	Arch Brick	15 13½ 13½ 13"	14
I	Key Brick	9 4½ 13½ 13"	100
J	I.C. Conduit	9' 3" 4' 4"	1
K	I.C. Pipe	9' 3"	1
L	Casting	See Detail	14
M	Bolt	4" 3" 1"	8
N	I Beam	4" 1 15" 13 lb	1
O	I Beam	4" 3" 5 15" 13 lb	1
P	Plate	3" 1 15"	1
Q	"	14" 1 10" 5 lb	1
R	"	See Detail	1
S	Damper	18" 17" 10"	1
T	I.C. Pipe	9' 3"	14

DETAILS & SPECIFICATIONS FOR RECTANGULAR DOWN-DRAFT GAS FIRED TEST-KILN

to the fire. It should be placed about two to three courses of brick lower in order to obviate the rapid evaporation of the water and the burning of the top of the pan.

DISCUSSION

Mr. Blair: Will Professor Stull give us an idea of the cost of burning that first kiln?

Prof. Stull: Yes I can give you an idea of the cost. Like

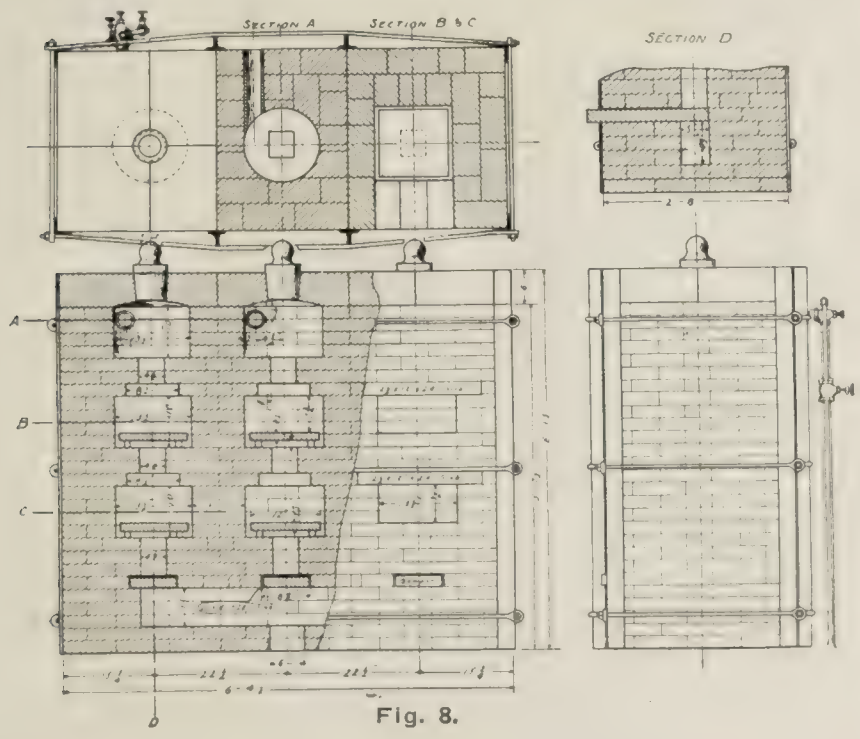


Fig. 8.



Fig. 9.

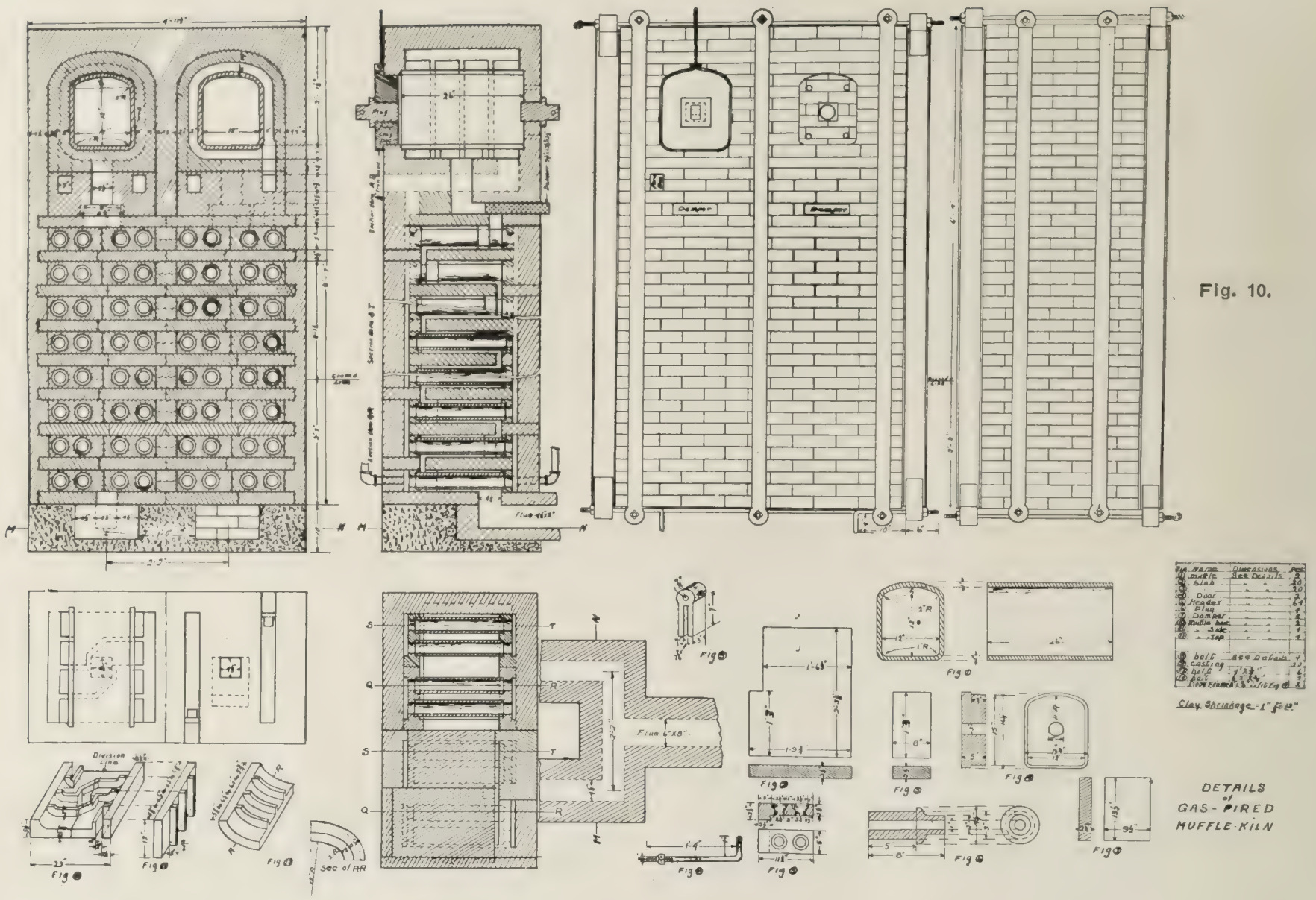


Fig. 10.

Professor Bleininger, I did not want to scare you to death with the figures. A large fill was made on the present site of the new kiln house. In building the foundations for these kilns, it was necessary to go down so deep to get solid ground that it brought up the costs enormously. The cost of that part below ground is nearly as much as that above ground. The first furnace shown cost between seven hundred and eight hundred dollars, that is, as near as I can remember. The figure given is for the kiln complete, including foundation, flues, iron work and all. Plenty of iron work has been placed on all kilns with a view to having them well braced.

"BRICK AND CLAY RECORD" READERS

May obtain copies of this paper on Test Kilns by applying to Prof. Stull at the

UNIVERSITY OF ILLINOIS, URBANA, ILL.

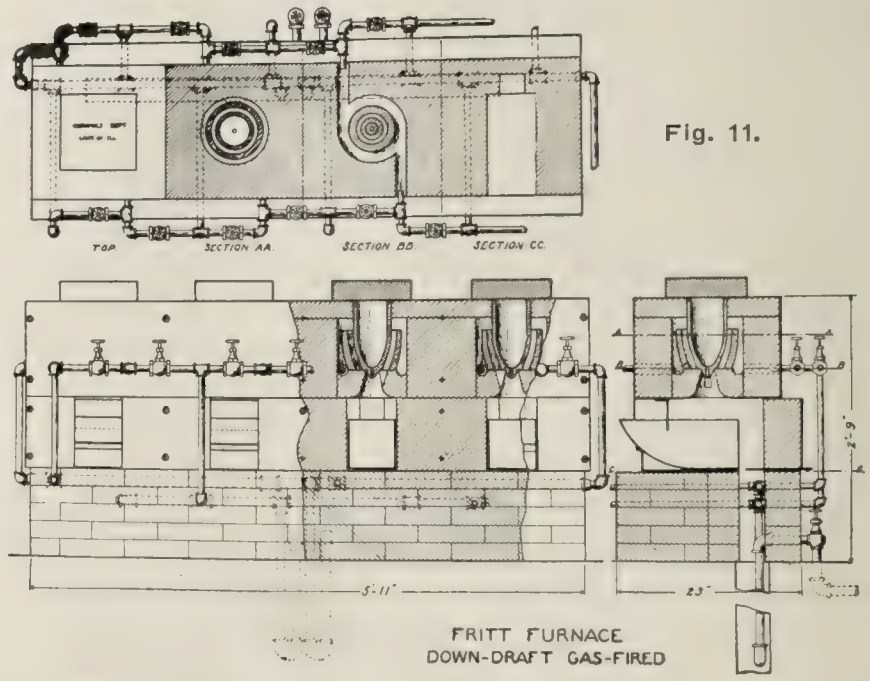


Fig. 11.

Some Signs That Are Not Profitable

"Pave with Brick" signs are not the only ones that decorate the public highways. Down at Louisville, Ky., a cement road, half a mile long, was built, some time last summer, at the solicitation of the Louisville Automobile Club. It was a part of the Bardstown pike, and ran from the city limits to Doup's point.

The sand and gravel for the road was donated, and the road was built under city supervision, as well as under the watchful eye of the inspector of the cement company that furnished the cement.

When the road was finished, a huge sign was erected, stating that the road was built by experts, and that a certain brand of cement had been used. Within a few months, the road proved its utter worthlessness.

Then, according to a petitioner before the Fiscal Court, a cement man came along, and took down the sign. The petitioner pleaded for another sign, to duplicate the first, and to be put up by order of the court. He contended that the cement companies made capital out of the road so long as it looked all right, and that taking the sign away when the road went to pieces, deprived the public of an education it deserved to have.

County Engineer Gaines says that the road cannot be repaired.



FRITZ SALMEN,
President



WILLIAM P. VARNEY,
Vice-President



GEORGE H. CLIPPERT,
Treasurer

National Building Brick Bureau Formed

Committee of Ten Appointed at Detroit N. B. M. A. Convention Organizes a Permanent Body and Elects Officers

COMMON BUILDING BRICK has, at last, an organized promotion. It started at the N. B. M. A. convention, in Detroit, when President Mayer appointed a committee of twenty-five brick manufacturers and dealers, with Fritz Salmen, of Slidell, La., as chairman.

Before that convention closed, the committee of twenty-five had been concentrated into a committee of ten, with the same genial gentleman as chairman.

At Indianapolis, Indiana, April 27, the committee of ten merged itself into a permanent organization, and will be known, hereafter as the National Building Brick Bureau.

A charter, or constitution was adopted, and under it, the following directors were elected:

Directors (*three years*): Fritz Salmen, Slidell, La.; George H. Clippert, Detroit, Mich.; Warren W. Ittner, St. Louis, Mo.

Directors (*two years*): William P. Varney, Chicago; H. C. Kleymeyer, Evansville, Ind.; Thomas E. Wilson, Pittsburgh.

Directors (*one year*): Edwin Brockway, New York, N. Y.; J. Fred. Smith, Omaha, Neb.; Theo. A. Randall, Indianapolis, Ind.

The directors elected the following officers, to serve for the ensuing year, or until their successors shall have been elected and have qualified:

Fritz Salmen, president; William P. Varney, vice-president; George H. Clippert, treasurer; Theo. A. Randall, secretary-manager.



THEODORE A. RANDALL,
Secretary-Manager

The secretary-manager will work under the direction of an executive committee, which consists of William P. Varney, of Chicago; George H. Clippert, of Detroit and H. C. Kleymeyer, of Evansville.

Unburnable Cities

There is one fact pervading half the dispatches from the western war zone of Europe which Americans would do well to take to heart—the fact that neither bombardments nor direct incendiarism has been able to start such conflagrations as those which have devastated so many cities and towns of America.

European cities and villages, especially those in what may be called the Napoleonic area, simply won't burn. When the Germans wished to destroy a Belgian town, they had to set fire to each separate house. The woodwork in that house, the floors and staircases, would be consumed, but the brick and plaster walls and tile or slate roofs kept the fire from passing on. In France, it was the same.

Rheims has been under fire six months, and nothing more than local blazes have started in all that time. Try to imagine Chicago subjected to such a trial!

The above item appeared in a recent issue of the Chicago "Journal" and points with an unerring finger to the positive proof of the saneness of fire-resistant construction.

Tile Your Farm
WITH EVERLASTING BURNED CLAY
PLATCO CLAY TILE VAN METER

Reaching the Farmer

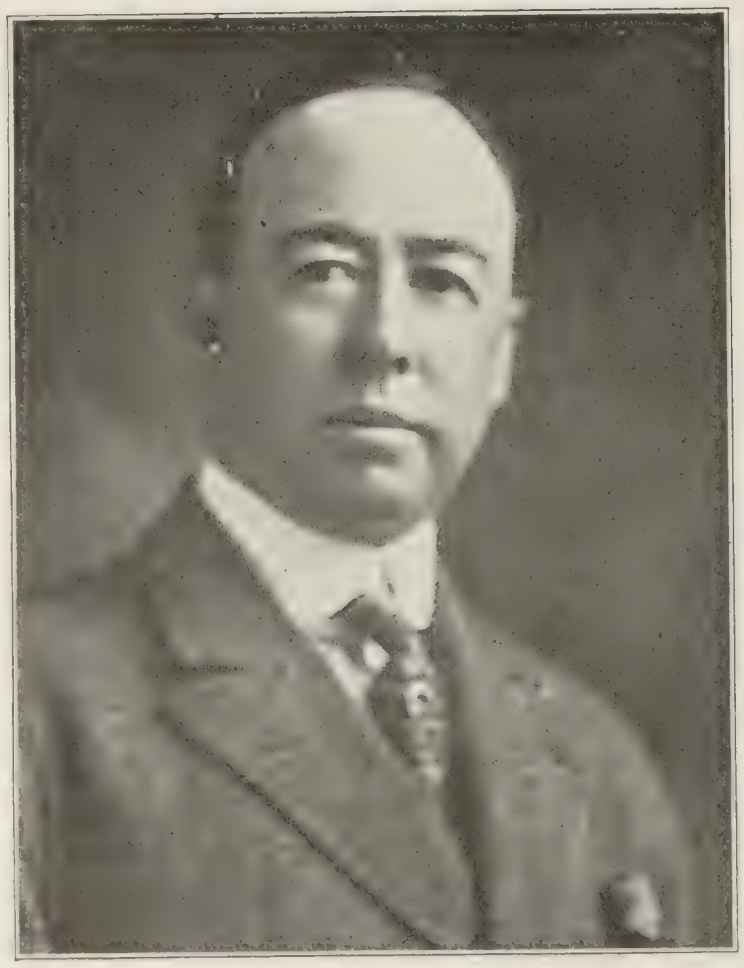
Travel any road you will, and at either hand you will find a sheet steel sign, advertising someone's bread, someone's tobacco, someone's sewing machine. These signs are there because the first signs tacked up along those roads *paid handsome dividends on the amount invested.*

The amount that is annually spent for advertising signs that are tacked on trees, telegraph poles and fences (when the fences are of wood) or wired to fences, when they are of barbed wire, is tremendous. But the amount is growing each year—and it would not grow if it were not paying.

Manufacturers of drain-tile, who want to put the thought of clay drain tile in the farmer's mind, can find no cheaper nor more effective way of bringing their product to the attention of a large number of prospective customers, by putting up similar signs. "Brick and Clay Record" can, if the orders for these signs are placed at once, make a very low price on them. This low price can not be given, however, unless at least 2,500 in all, are ordered. So far, we have orders for 625—just one-quarter of the number that it is necessary to have, to be able to give everyone a figure of 6c per sign, with an extra charge for imprinting your own name. This imprinting charge is $1.25 for 100 or less, and 50c per hundred for all over the first hundred.

We have had a number of inquiries, that may turn into orders—if the writers will place definite orders at once. In the meantime, every drain-tile plant can help its own business by buying a few and—better still—making arrangements to have them put up as soon as they are received.

We are going to hold all of the orders until May 15—if we have 2,500 ordered by that time, we will have them made at once—otherwise we will have to disappoint those who have already placed their orders with us.



BURTON J. MITCHELL,
President N. Y. State Bldrs. Supply Assn.

Mitchell Bldrs. Supply Co. Succeeds Wm. S. Humbert, Inc.

At the third annual convention of the New York State Builders' Association, which was held in Utica, N. Y., March 24th and 25th, Burton J. Mitchell of Niagara Falls, N. Y., was elected president; C. A. Baldwin of Ithaca, N. Y., treasurer; M. T. Bannigan of Utica, Henry Shafer of Buffalo, J. W. Ballard of Binghamton and W. P. Boright of Chatham were elected vice-presidents; George D. Edwell of Albany was made secretary and general manager.

Burton J. Mitchell, whose portrait is shown in the accompanying illustration, is well and favorably known in New York State. For many years he has been identified with the building supply business in Niagara Falls and has gained a great deal of success in the paving brick line.

He recently announced the incorporation of the Mitchell Builders' Supply Company, Inc., to succeed the firm of Wm. S. Humbert, Inc. Burton J. Mitchell is president of the newly organized company.

Rogers Combs is Back

R. M. Combs, vice-president of the Thomas Moulding Brick Company, Chicago, has returned to his work with regained health. For the past six weeks Mr. Combs has been "swept by ocean breezes" in Tampa and Jacksonville, Fla. In order that the change from the balmy Florida climate to that of Chicago might be tempered, he stopped over at West Baden, Indiana, for a few days and so clinched the good work done in the sunny south.



Birdseye View of One of the Largest Kaolin Plants in Pennsylvania. The Pits in Which the Kaolin is Steeped for Three to Four Months Are Seen in the Foreground

An American Kaolin Industry

The Silver Lining to the European War Cloud is Somewhere in Pennsylvania Where China Clay is Mined

By H. Winslow Fegley

IN BERKS COUNTY, Pennsylvania, there is considerable variation in the surface features, ranging from the steep, rough and mountainous country along the northern border to the gently rolling and undulating land throughout portions of the limestone valleys. The shape of the county somewhat resembles a diamond, with its longer dimension extending east and west. Its location is between 40 and 41 degrees north latitude and between 75 and 77 degrees west longitude.

Geologically, the county presents an interesting study, because there are six distinct formations, each giving rise to from one to five soil types, every one of which has peculiar characteristics, whether they pertain to their worth agriculturally, or for their valuable deposits of mineral ores and clay on the granite, limestone and sand formations.

Among its clay deposits, there are such as are known by geologists as the Hagerstown clay loam and the Penn clay loam. Among the former is the sub-type of massive limestone of the Cambro-Silurian age, affording an abundant supply of limestone for the farmers to enrich their top soil; close thereto are veins of hydrous aluminum silicate, commonly known as kaolin, formed in ages past through the decomposition of feldspar. In all probability, the fields wherein the Berks county kaolin mines are located, were surrounded by granite, for only two miles away from those rich kaolin beds are immense quarries of granite rock, among the finest found in the State of Pennsylvania.

This kaolin industry is located in Longswamp township, about two miles from the nearest shipping point on the East Penn branch of the Reading Railroad system. The surface soil around those mines consists of a brown silty clay loam of the Hagerstown type. The sub-soil is yellow or yellowish red, grading gradually into a clay loam at 16 or 20 inches. The silty upper sub-soil sometimes lacks the features noted, and the surface soil then grades directly into the clay loam. Here and there, fragments of limestone are found in the sub-soil and the bed rock of limestone is often encountered at a depth of two or six feet, for all around the kaolin mines, and within a mile or two, are valuable limestone quarries and kilns.

This township is one of the richest, agriculturally, in the county. It is also the richest in mineral deposits, having for years, had the best deposits of iron ore in the county. It contains valuable deposits of floated ochre, some of these ochre mines producing 1,000 barrels per month; and these are not confined to one color, though most of them are what might be termed vermilion brown, brown and red.

The kaolin deposits were first discovered in 1876 on the lands of David DeLong, where the beds were quite numerous and the product almost pure white, making it especially adapted for the uses of paper manufacturers, the finer clay products, and for the use of chemists and ceramists.

The word "kaolin" is accepted as the Chinese term designating earth that is serviceable in the manufacture of porcelain. In addition to the rich deposits in this township, other

deposits are found in Delaware and Chester counties and on the northern side of South Mountain in Lehigh county. The clay discovered in this township is known as being of an excellent quality; it lies in eroded cavities of the lower Silurian limestone-white, red, yellow and brown clay in close proximity to limonite iron deposits.

The kaolin that is mined in Longswamp township is taken from pits from 25 to 100 feet in depth. The clay, as it is dug from the earth, is carried to the surface by an endless bucket system, which works automatically, and as soon as it reaches its destination, workmen shovel it from the dumping wharves upon wheel-barrows, in which it is wheeled to the extensive pits, lined with heavy planking, that are hollowed out of the earth near by. There are six or eight of these pits at each of the more important mines, measuring from 200 to 300 feet in length by half as wide, and about 12 feet deep.

When one of the pits is filled with the rough kaolin it is flooded with clear water, which is left in the pit for three or four months. Occasionally these pits are flooded in the fall of the year and left until the following spring, but in summer two floodings of a pit may be made. The water will evaporate to a certain extent, and a close watch is kept upon every pit, so that there is always enough water above the surface of the deposited kaolin.

After this soaking process is thoroughly completed, the kaolin is again lifted from the pits, and spaded out in small blocks, which are again placed on the wheel-barrows and hauled to the drying houses, where the blocks are placed on shelves, one tier above another, for the purpose of thoroughly drying. The kaolin being full of pores, has, during its stay in the pits, absorbed a good deal of water, and this has all to be disposed of by evaporation. It usually takes several



A Closer View of the Drying Racks

months' drying on these racks before the sun and air has finally drawn away the water.

In some of the more extensive plants in Pennsylvania, the liquid containing the kaolin as it comes from the earth is run into channels (sometimes called drags), where the coarser impurities are left, and as it continues to other channels (known as micas) still finer particles settle to the bottom of the channel, leaving the kaolin in a purified condition.

The mixture in this process is water-like, looking like lime-water, or white-wash when the clay is of the white colored material. From these channels the clay then runs into pits as already described, until it has acquired the consistency that is required to permit its removal to the drying house, which, in the more extensive plants, is heated by flues.

After this drying process, the kaolin is ready to be ground into powder. The blocks, now slightly smaller and much lighter in weight, are again placed on the wheel-barrows in the smaller plants and upon trucks in the more extensive ones, and conveyed to the grinding pits, which resemble to a



Digging the Kaolin from the Pit. The Drying Shed is Shown in the Rear

certain extent those used by potters to grind their clay, horse or steam power being used to do this work.

After the kaolin is ground so fine that it almost resembles dust, it is deposited into large bags holding about 200 pounds or in some cases packed in barrels, and shipped to the concerns that at present operate the largest of these kaolin mines, and from this central point it finds its ways into the trade circles, finally reaching the manufacturing plant, where its use may be for half-a-dozen different purposes.

It is estimated that fifty per cent of the Longswamp kaolin is used in the manufacture of clay products and paper commodities. A good deal is used to make alum, the valuable component of which for dyeing and printing, is the aluminum sulphate. In the late use of kaolin in paper mills, the fine particles are simply cemented to the fibre by means of aluminum hydrate, and serve to give body to the paper. Especially is this the case in the manufacture of wall paper.

Kaolin deposits are of various kinds, and are composed of three species of minerals—quartz, feldspar and mica.

The kaolin of the mines in Longswamp township shows a whitish color, generally, and when touched by the hand it resembles soap; but is soft and brittle and has an adherent nature and a peculiar odor. Kneaded together with water, it absorbs the latter in considerable quantities and becomes plastic. A good deal of it has been used to make the cheaper grades of chinaware.

Before the kaolin deposits were discovered in this region, the rich iron deposits kept many hundreds of persons employed. Nearly every farm is underlaid with iron-ore de-

posits and hundreds of mines were at one time or another in operation during the last 125 years in this township alone.

Within two miles of this—the largest kaolin mine—smoke could be seen rising from forty engines and boilers that were in operation at iron-ore mining industries. This was many years ago, however, and the old plants have chiefly been abandoned. There are rumors, however, that some of these plants will soon resume operations, the promised activity being ascribed to the war in Europe.

One of the oldest of kaolin mines has three large beds situated at Mertztown and near Alburtis, Pa. Two of these beds have been operated for more than forty years. These deposits are considered very valuable, and, although not of the highest type of clay to be found in America, it answers the purpose for manufacturing many articles where kaolin is used.



The Kaolin Pits and Drying Sheds

At this plant no open-air pits are used. The clay, as it is dug from the open deposits, is soaked thoroughly in vats that are located in buildings, and from these vats it is conveyed to the filter presses and later dried in steam drying kilns.

Some of the clay is also taken right from the open deposits, and after being pulverized, is shipped to manufacturing plants that make asbestos products.

Up to this time the war situation has not materially affected the trade of the plants in this section. During 1914 more clay had been imported to America from England than previously. This was caused by the fact that England was unable to ship any of its clay to any of the other European countries at war, and America, for the time being, became the dumping ground, this, despite the fact that domestic kaolin has been selling at $9 per ton in New York City and the prices of foreign clay f. o. b., the same city, have varied from $14 to $20 per ton.

From these mines, also, a considerable quantity has been shipped to Canadian manufacturers, but lately there has been an increase of seven and one-half per cent in duty on all clay shipped from the United States to Canada, in order to help make up Canada's part in the war fund that the mother country needs.

While Germany has some of the finest clay deposits, few shipments have been received from that country of late, and it is said that some Ohio potters have found a way to use domestic clays and, at the same time, make better ware than before.

The majority of the clay from the Pennsylvania deposits, however, are not of special benefit to the manufacturer of chinaware products, owing to the fact that the deposit of iron in the clay is about 1 per cent and in some cases more. This prevents the clay from burning white and when the ware comes from the kilns it has too much of the yellow hue.

As the war situation makes the resumption of normal shipments more and more distant, the prospects grow brighter for the clay works in Pennsylvania, because as the shipments decrease from England, prices will increase here, and the demand will become greater.

Some Reliable Prosperity Information

Professional optimism is the quality which makes men say that "business is good" whether their sales are normal, or poor. Professional pessimism is the reverse. Business boomers have preached that the confidence which would follow every one's talking "good business" would bring a buying movement which, in itself, would so stimulate trade as to make the assumed "good business" real.

It is to be regretted that professional pessimism hurts business more than professional optimism helps it. The investor is scared by "hard times" talk much more easily than he is encouraged by "business is fine." He requires more proof in the latter instance than in the former.

Theodore H. Price, writing in the "World's Work" gives us something more tangible than the off-hand opinion of a single individual. Having sent a large number of letters to prominent business men in all sections of the country, in which he asked for their carefully considered opinions on various conditions that had a bearing upon prosperity or its reverse, succeeded in securing the written opinions of more than seven hundred men, which he has tabulated in such a way as to mirror the opinion of the business world of America.

He finds that, out of 129 men, answering from Delaware, Maryland, New Jersey, New York and Pennsylvania, 76 believed that the outlook for American business during 1915 was encouraging; 18 said it was normal; 35 said it was discouraging.

From Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island and Vermont, out of 84, 41 said it was encouraging; 20 said it was normal; 23 said it was discouraging.

From the Central West and Rocky Mountain states, out of 278, 176 believed the prospect encouraging; 42 thought it normal; 60 said it was discouraging.

In the Northwestern states, out of 98 answering, 60 thought it encouraging; 24 normal; 14 discouraging.

The Pacific Coast, out of 50 answering, had 34 who believed the prospect encouraging; 7 normal; 9 discouraging.

In the South Atlantic states, the depression was more marked; out of 35, 16 looked upon the prospects as being good; 4 normal; 15 discouraging.

The Southwestern states, including Louisiana, sent 27 replies, of which 17 came from men who believed 1915 a "year of promise"; 6 thought it would be normal; 4 were discouraged.

Various other questions, relative to the amount of stocks carried over, the unemployment of labor, and the elasticity of bank credits were also answered.

Flower Pot Possibilities

A ready and prompt supply of pots has long been a serious problem with greenhousemen everywhere, regardless of the distance from distributing markets. Most of the order or "contract" deliveries are made in the early spring or fall, the prices being based on carload lots, as a rule; shipments in lesser quantities would be unprofitable owing to the high freight.

Although the factories which manufacture flower pots operate under a common standard as to sizes and practically as to weight, there is a material differentiation in list prices with the various "florist trade" potters—better known as the advertising potters to the floral agricultural industry proper and allied. As it is, Balsley of Detroit gets a better price for his red ware made famous through publicity, than many of the other manufacturers of red pots in the North, East or elsewhere; so do the Syracuse, N. Y., factories—which is simply the effect of being known as leaders and originators and of maintaining prestige through uniform quality and an effective follow-up system of personal solicitation. This latter, in time, develops into mere trade visits as incidents to permanent relations.

All growers of any importance, locally and otherwise, with capacities ranging from 5,000 ft. of glass or cold-frame to millions, are in the habit of buying direct from the potteries, individually or collectively—"clubbing" orders when carload lots are not feasible. Few order through supply or commission houses that feature the flower market. Seed houses, crockery and hardware stores secure but a little of the floral demand, their outlet being mainly for domestic uses. Greenhousemen could not afford the added middleman's or retailer's profit, and, running short, they have to resort to either some auxiliary local pottery or they buy or borrow from one another.

The traffic in used pots is not as yet commercialized; there are occasional exchanges in trade.

The flower pot sizes mostly in demand are from one to seven inches—2s, 2½s, 3s, 3½s, 4s and 5s making up the bulk. The agreed standardization runs 24 inches. Up to date machines are constructed accordingly or may be so adjusted. Saucers or drip pans, like crating, are not gratis, prices being based, as a rule, on the material used, and rating with the ordinary fern dishes.

The distinction of "pot" and "pan" is patent to every greenhouseman as is "jardiniere" and "vase."

Benches—that is, the greenhouse flower beds, are already constructed of tile and are growing in use. They are sanitary, vermin-proof and can be thoroughly cleansed. Tile cold-frame will come next and tile—instead of concrete—weather walls, wind breaks and partitions. The greenhouse and clayworking industries will have many views to exchange in the near future.

There is, at the present time, a much bespoken need of an irrigated tile window box, veranda or porch box—for tile stumps for the lawn and other specialties that may soon appear in the market.

The American pottery industry is, as yet, undeveloped, though the muster roll of what it should be has been practically worked out. Europe will be out of competition as regards flower pots and, as to the finer pottery wares, the United States can duplicate and improve on the foreign product.

Business Publications Plan Chicago Exhibit

One feature of the coming convention of the Associated Advertising Clubs of the World, to be held in Chicago, June 20-24, and which is arousing considerable interest, is the educational exhibit of the Trade and Technical Publications. At Toronto last year this exhibit attracted a great deal of attention. As visitors studied the many charts and diagrams showing the possibilities of business publications as educational, as well as advertising mediums, they awoke to a new appreciation of their value. Those who will see the exhibit which is now being prepared for the Chicago Convention will be equally impressed.

One point this exhibit will emphasize will be the tendency of modern business publications to select the circulation that is of the utmost value to the advertiser. A few years ago publishers were not particular as to the buying power of a subscriber, but to-day they recognize that circulation of a non-buying variety is a liability. Most business publications cost many times the subscription price to produce, hence the increasing tendency to spare no effort in securing all the buying units in the field. It is this far-sighted circulation policy which has done so much to broaden the editoral policy of business publications and the effort to attract to themselves, the friendly interest of the better known and more prosperous men in the fields they serve.

In addition to the exhibit of business papers, there will be similar displays by the specialty manufacturers, magazines, newspapers and so on down the line. But the lode stone of the Convention will undoubtedly prove to be the departmental sessions which will be held in the Auditorium Hotel and Annex. A very comprehensive program is planned and many prominent business men will speak.

Regarding Thomas Carey

In the April 20 issue of "Brick and Clay Record" an item was published relative to Thomas Carey, former president of the Carey Brick Company, in which was announced the fact that he would leave Chicago shortly and make his home in California. In this item the statement was made that Mr. Carey was president of the Carey Brick Company. This is an error, as he retired from active business more than a year ago.

The officers of the Carey Brick Company are: A. L. Schultz, president; Edw. Groening and William D. Carpenter, vice-presidents; M. R. Wall, treasurer, and D. L. Gallivan, secretary.

Buy it Now

Don't squander your money. Luxuries can wait. But buy the necessities you require. Don't wait until "later in the spring." Everyone will be buying then, deliveries will be slow, prices high. Your business, so welcome now, will be "a part of the day's work" then—and, as an incident in a busy day, may receive but little attention.

Proper Fireplace Construction

The Beauty of a Brick Mantel Will Not Make Its Ownership Pleasurable Unless the Chimney Draws Properly

BRICK FIREPLACES are gaining in popularity with each year. They will continue to win popular favor so long as proper attention is paid to their interior economy.

Visitors at old farmhouses are often surprised at the number of fireplaces that are sealed up, says the "Cement World." Usually the same explanation is given,—that it smoked so much that the family grew tired of it, and put in a stove.

If the construction of the fireplace and flue is all right, the trouble is, of course, only temporary, and is due to greater downward pressure of cold air in the flue than the upward pressure of the warmer air from the room is able to overcome. In such a case, usually, an effective remedy is to crumple up a newspaper, poke it up the flue just above the throat, and then light it. A strong upward-pressing current of air will be generated, which will turn the balance and promptly put an end to the trouble.

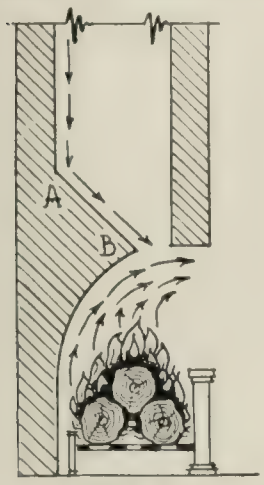


Fig. *a*

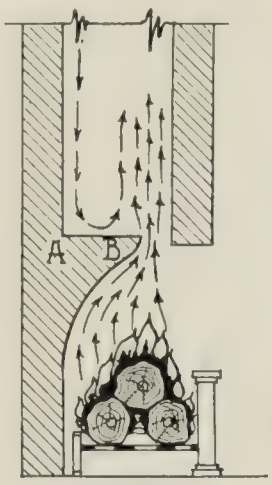


Fig. *b*

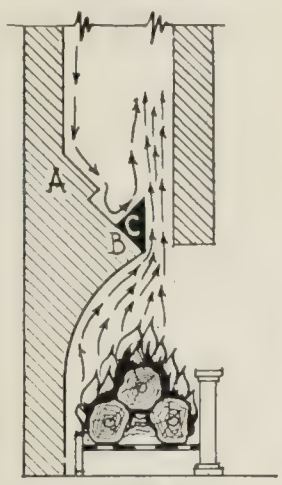


Fig. *c*

If, in any instance, the fireplace still continues to smoke, it is probable that the construction is at fault. The most common defect in a fireplace is a lack of proper proportion between the area of the fireplace opening and the area or cross-section of the inside of the flue or chimney. It should be as 10 to 1. When it is larger than that, more air is mixed with the heat, smoke, and gases, and the flue is unable to carry off the whole without artificial aid. If you discover that the mouth of your fireplace is more than ten times the area of the flue opening, you can reduce the former by placing a hood across the top of the mouth of the fireplace; but take care that the design of the hood is not out of harmony with the style and the lines of the fireplace.

The second common defects in fireplaces is the slanting throat. The mason who builds the throat of the fireplace with a slant (see *AB* in Fig. *a*) is obviously thinking only of the column of hot air that comes from the fire, curves past the nose *B*, and goes easily on and up. Thinking of the problem in this way, he sees no particular harm in making *AB* on a slant.

But in reality every household chimney must accommodate not merely one column of air, but two. Unless the fire has been hot for a long period and the draft is exceptionally strong, there will be a column of cold air coming down the chimney and striking at *A*. When *AB* is on a slant, this thin column of cold air slides down and meets the smoke and gases coming up from the fire. The result is to drive the smoke and gases—usually in little puffs—into the room.

The correct way to build the throat is to have *AB* flat, as shown in Fig. *b*. Then the column of cold air rests on *AB*, and, curling up at the base, goes up in almost frictionless flight with the stream of hot air. The chimney then has a draft.

An intelligent mason who discovers that his predecessor has built *AB* on a slant, will knock out the row of bricks at *B*, and then build a slight "retaining wall" of cement along the edge of the nose, three or four inches high (*C* in Fig. *c*). This "retaining wall" will keep the thin stream of cold air from sliding down into the fireplace and forcing smoke and gas into the room.

The two defects here described usually result in smoke; but there are fireplaces that, although they do not smoke, are "listless" and have poor drafts. They are to be fed with very dry wood and tended with great care. Generally they can be much improved by extending the chimney ten or twelve feet in height. Sometimes—although not always—the additional draft can be obtained by placing on the chimney a revolving top.

Sixth City After Brick Convention

Cleveland, Ohio, is making a strenuous effort to secure the Nineteen Sixteen convention of the National Brick Manufacturers' Association. To this end it has appointed a committee of representative brickmakers, prominent among whom are Will P. Blair, Secretary of the National Paving Brick Manufacturers' Association; Paul B. Belden of the Belden Brick Company, Canton, Ohio, and Ralph P. Stoddard. Secretary of the Society Advocating Fire Elimination.

One of the attractions which the Sixth City offers is the nearest thing to a "Clay Show" that has been held since Chicago showed the way in 1912 and 1913.

This show will be an exhibition of fire resistant building materials and will include everything that enters into building construction which can truthfully make the claim of being fire safe.

The American Face Brick Association and the Face Brick Dealers' Association will be asked to change their convention dates so that they too can hold a meeting in Cleveland during the exhibition, and the appointment of Mr. Blair would indicate that the National Paving Brick Manufacturers' Association would also hold a meeting in Cleveland at this time.

Pennsylvania Plant Ships Conduit to Panama

The Shawmut Clay Manufacturing Company, Drummond, Pa., has just made a shipment from New York of several cars of conduit intended for use in the Panama canal zone. The company has already shipped over three hundred cars of conduit for use along the government canal, and the fact that it has received a second order for material to be used at the same point, indicates that its product is entirely satisfactory for the important purpose to which it is being put in the tropics, and that it is of a quality that meets the government specifications.

Brick Garages

Beauty and Economy Combine With Sane Garage Construction

By Chas. Alma Byers



Fig. 1.—The Garage Forms a Part of the Basement

BRICK FOR BUILDING the private garage is gradually coming into considerable favor, although it has by no means reached the vogue that it deserves. While they unquestionably realize their shortsightedness, the majority of builders still persist in makin this very necessary feature of the modern home a veritable tinder-box affair by constructing it of wood. Certainly it is generally realized that the garage should be as nearly fireproof as possible, and it is a matter of equal certainty that there is no other building material that gives greater assurance of this than brick. Therefore, why should not the family garage be more often of brick construction? It is, of course, true that the brick-built garage costs a little more at construction time, than the tinder-box kind, but the safety and permanency assured and the saving in up-keep expense eventually much more than offsets the difference.

There is also the matter of appearance to be considered. The garage is necessarily a feature of the garden or grounds of the home, and, therefore, it should be suitably attractive from an architectural point of view. The house may not always be of brick construction, but even when it is not, there is frequently more or less brick work about it, which invites a continuation of the use of brick into the garden. Therefore, since it should be primarily fireproof, the garage of brick construction should follow as a natural sequence, for with no other material can it be made more attractive nor be fitted into the garden scheme with more pleasing effect. Brick is peculiarly susceptible to artistic handling, and there is no limit to its possibilities as a material for building this garden and home accessory. Herewith, to show some of its possibilities in this direction, are reproduced photographs of a number of particularly attractive private garages of brick construction, of widely different character.

When a city residence occupies a lot that rises quite abruptly above the street level, requiring that the grounds in front be considerably terraced, it is often very much of a problem to decide upon a site for the necessary garage. About the only solution to the problem is to tunnel into the hillside, and thus locate the garage in front of the house. One of the accompanying illustrations (Figure 1.) shows a slightly different arrangement, however, for here the garage virtually forms a part of the basement of the house, and the entrance to it is by way of a driveway that leads through a pergola of attractive design, thus preventing the garage from being too conspicuous. The entire lower walls of the house are constructed of brick, and the garage is also built of brick. Considerable brick work enters into the terracing scheme, and low brick walls border the driveway at either side, forming the base for the pergola uprights. The garage is of ample dimensions to house two cars.

Figure 2 shows such a garage of specially large size and of unusually elaborate design. This garage provides ample space for housing three cars, and there are rooms



Fig. 2.—The Gardener and the Chauffeur Have Ample Living Accommodations Above This Garage, Which is Designed to House Three Cars

above that are fitted up as the living quarters for the family's chauffeur and gardener. There are three separate doorways for the entry of cars, and between these are



Fig. 3.—A Red Tile Roof Adds to Its Attractiveness

placed two artistic electric-light globes, while on the front is also a door that gives separate access to the stairway leading to the second floor. The walls of the garage are of grayish-toned brick, attractively laid, and the roofing is of green-colored tile—a combination of colors that

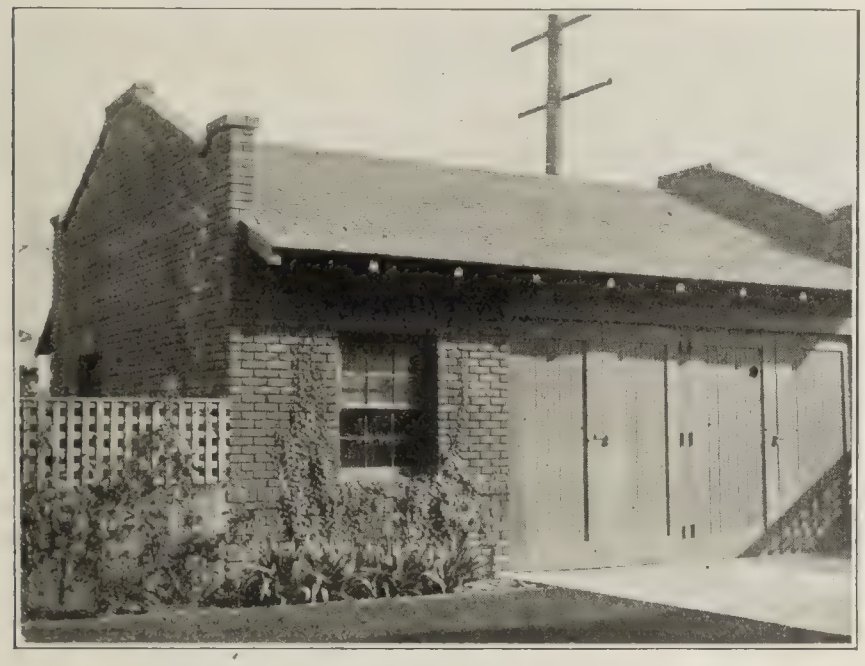


Fig. 5.—Red Rough Brick and Green Woodwork.

is very effective. The flooring is of cement, and the driveway is of gravel. With the exception of the doors, the structure is absolutely fireproof in every detail. Needless to say, the garage corresponds in style and construction with the architecture of the house, and amid its environment of trees, it becomes a genuine credit to the extensive grounds.

Another illustration (Figure 3) shows a much smaller and more simply designed garage that possesses a roof of red tile. This garage is but one story in height, and provides room for but one car. Its walls are of bluish red brick, and its flooring and driveway are of cement. Except for the doors, it also is fireproof, and for the family of moderate means it is a very sensibly designed and constructed garage, being both durable and comparatively inexpensive.

Another very small family garage is shown in another of the illustrations (Figure 4). In this case the walls are constructed of paving brick, and the flat roof is covered



Fig. 4.—A Garage Built of Paving Brick

with an asbestos-like roofing composition, while the flooring is of cement. Here again the cost of building was very slight, and yet a very permanent house for the motor car is provided.

Another of the illustrations (Figure 5) shows a garage of somewhat similar design, but in this instance the brick used for the walls and gables are rough-faced red to purple laid in dark mortar. The double doors and the shingled roof, as well as the window frames, are painted a very dark shade of green, and the color scheme thus created is quite striking. Here again, space is provided for two cars, and there is also a storage room in one end. The structure forms a very attractive feature of the garden.

These illustrations suggest a wide range of styles for brick-built garages, and should constitute a strong argument for the use of brick for this purpose. It will be realized beyond question that a garage of such construction fits admirably into almost any garden scheme and at the same time assures durability and greater safety from possible fires.

Publicity Work for Clay Products in Canada

Three Ontario sewer-pipe companies and one from Quebec are interested in a new publicity bureau, which has been organized somewhat along the lines of the International Clay Products Bureau of Kansas City, Mo.

Ryland H. New, of the Hamilton and Toronto Sewer Pipe Company, is president of the new body, which is to be known as the Canadian Clay Products Bureau.

Eastern Pavers Elect New Officers

C. E. Foster, of Bradford, Pa., laid down the gavel of the Eastern Paving Brick Manufacturers' Association at the convention that closed in Pittsburgh, Pa., March 31. He is succeeded by Charles A. Young, of the Mack Manufacturing Company, of Pittsburgh. G. W. Greenwood, of the United Brick Company, of Uniontown, Pa., was elected first vice-president, and M. E. Gregory, of Corning, N. Y., second vice-president. G. W. Lenkerd, of the Clymer Brick and Fire Clay Company, of Clymer, Pa., was re-elected secretary, and C. P. Mayer, president of the National Brick Manufacturers' Association, treasurer.

Among those who addressed the convention were Edward Orton, Jr., of Columbus, Ohio, and Will P. Blair, secretary of the National Paving Brick Manufacturers' Association.

Questions and Answers

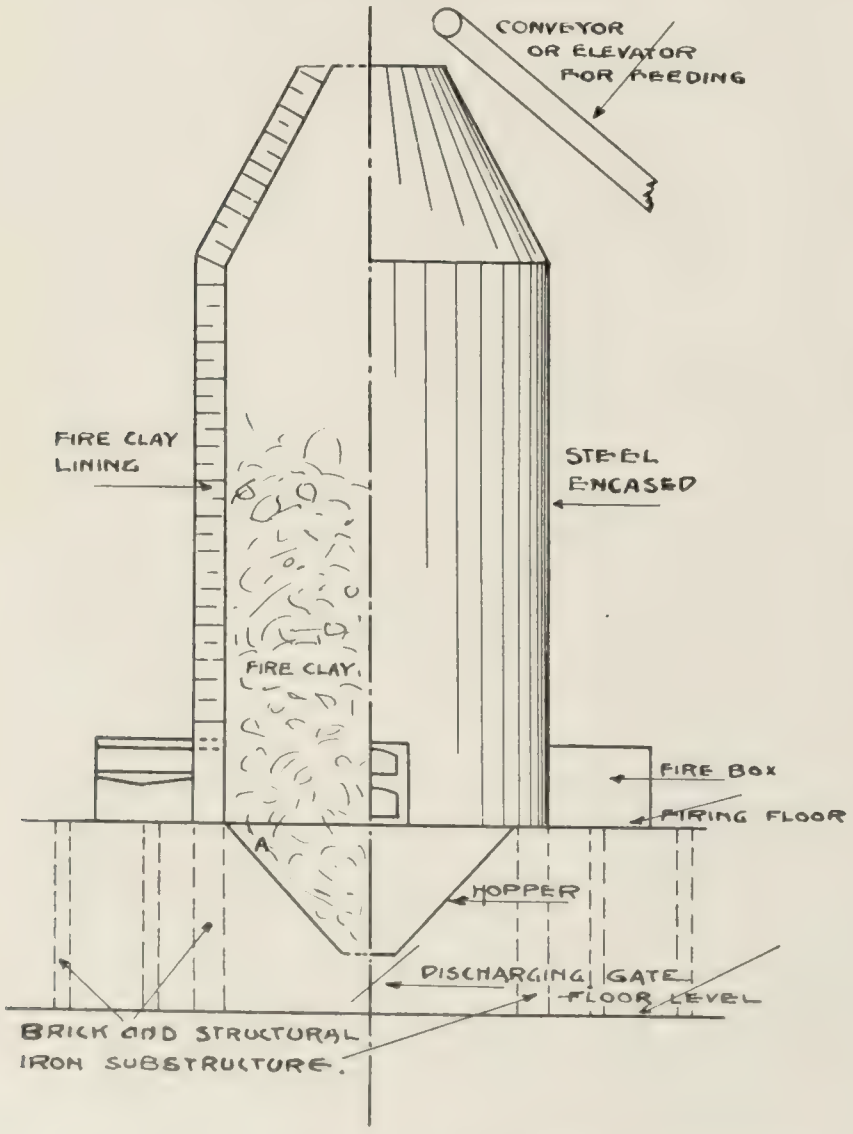
Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

A Kiln to Calcine Fire Clay

663. *Missouri—We are desirous of being informed as to the most practical type of kiln for calcining lump fire-clay. The clay which we wish to calcine is a plastic clay and contains from nine to twelve per cent of water. We desire to remove the lumps direct from the mine and place them in the kiln. In doing so, they will not have time to air-slack. In this district, it is the custom to make "dobies," which are used for grog. But we are under the impression that the great amount of fine clay in these "dobies" is of but little value, as the "dobies" do not contain the original sharp cubes, as burnt lumps would contain. We are therefore desirous of learning of a practical kiln, which will calcine approximately one hundred tons of fire-clay daily. Do you know of any kilns in operation that are doing this, and which have conditions similar to ours?*

J. Otto Trautwein has given us the sketch that is printed below, and the explanation that follows it.



"There seems to be no reason why plastic fire-clay, containing from nine to twelve per cent of water, could not be calcined continuously, on the same principle as that used in a blast furnace. The fire-clay could be fed in at the top, by means of an elevator or conveyor, and peep-holes, placed in the hopper and in the kiln between the fire-boxes, would show how rapidly the calcining process was progressing."

Coloring Matter in Molding Sand

655. *Pennsylvania—In a recent issue of "Brick and Clay Record" I saw an article on coloring sand with red mortar color, in order to make the brick burn darker. Kindly give me all the information you can on this subject, as the sand I use burns lighter than my clay. Kindly inform me, as near as you can, what proportion of the coloring matter I should use.*

The quantity of red coloring matter that is necessary to bring the sand to the right color after it is burned, depends upon the strength of the pigment used, as well as on the quality of the sand and the kind of fuel burned. The better way is to experiment with a small batch of brick, keeping a careful account of the amount of color added to the sand, with each batch. Another way is described by Ellis Lovejoy, E. M., in an answer published more than a year ago in this department. In it, he said, in part: "In sand-molded brick we have, on several occasions, recommended wetting the sand with ferrous sulphate (copperas) followed by drying. This treatment of the sand produces a brilliant red color and this method of coloring the sand for the molds is in practical use."

The Economy of Reburning Soft Brick

664. *Colorado—Knowing that you are familiar with all branches of the clayworking business, I take this means of finding out if it is a good plan to reset dry-press salmon brick in a down-draft kiln and so burn them again. The brick I refer to have not been burned long enough in an updraft kiln, and are real light salmon, or you might call them "dobies." If they are reset in a down draft kiln and burned over, will it make good, hard red brick out of them? And is it cheaper to handle them in this manner than it is to make more brick? We have about 200,000 of these brick and would like to know what we can do with them.*

Wisdom would suggest experimenting with the salmon brick—that is, placing several hundred of them in a kiln that is being set with new brick. Set the salmon brick in one column, from bottom to top, and, when the burn is over, make a careful observation of the salable qualities of these reburned brick. If they are worth next to nothing, now—and are worth more than the cost of reburning them, when they have been reburned, then there is a greater economy in reburning, than there is in making new brick. Another point in favor of reburning is that 200,000 brick that cannot be sold simply occupies space that ought to be given to better material.

But it is well to experiment, first. Otherwise, the reburn-

ing might give you nothing better than what you now have, and the fuel and time and kiln room would be wasted.

Cones vs. Pyrometers

661. *Ohio—I am writing to you as to a "neutral" to clear up a point that is giving me considerable worry, and which surely makes me doubt the accuracy of both my Seger cones and pyrometers. I formerly used cones exclusively, in burning my product, which is face-brick, and always reached cone* 1. *A few months ago, I put in a pyrometer system, and since that time I have stood on the banks of the River of Doubt. The two systems do not check and I do not know which is correct—if either. Professor Orton's cone* 1 *melts at* 2,102 *degrees Fah. according to the table, but when it melts in my kiln, the temperature reading, according to the pyrometer, is usually about* 1,930 *degrees Fah., which is a difference of* 172 *degrees. Can you tell me how to correct this, and whether the cones or the instrument or all of them, are at fault? I am anxious to use both, as the cones are a great help in finishing our burn and I have found, also, that our firemen take a great deal more interest in their work since they are able to watch the line of heat advance on the pyrometer.*

The question you ask is an old one and one that is bound to come up periodically, and almost always when anyone using one method decides to use the other also. At the outset, it must be stated that the cone and the pyrometer do not do the same work, contrary to the almost general opinion. The cone measures the result of heat. The pyrometer measures temperature. Professor Orton has, possibly, sent you a list of temperatures at which the cones are supposed to melt. They may, or may not melt at that particular point, depending upon the rate of firing, the quality of the kiln-gases, etc. He also undoubtedly told you that you should think in cone numbers, not in temperatures, when using his cones. You have found out, by experiment, that your ware matures and is at its best point at the time cone 1 falls over, providing the cone is in the same position in the kiln and also providing that the kiln is burned the same way each time. In other words, you have found that the combination of circumstances controlled by your burns has produced a certain result in your clay brick and in your clay cone,—that is, that they both mature at the same time. This does not mean that they both mature at the same temperature, with each burn. It is unfortunate that the temperature difference ever became associated with cones. The cone measures heat-work-accomplishment, and, under stated conditions, and, when intelligently used, is invaluable to any common-clay plant. The cone indicates when the ware has gone through a pyrometrical change, to maturity. The pyrometer is invaluable, to trace the temperature, whether rising in a burning kiln, or falling in a cooling kiln. It indicates the uniformity, or lack of uniformity in firing, and enables the burner to know whether his heat is falling, is stationary, or is rising. Use both cones and pyrometer, but forget about temperature in relation to the cones.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Praetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

AN opinion has just been handed down by the Interstate Commerce Commissioners in case No. 6530 of the Mound City Roofing Tile Company, of St. Louis, Mo., against the Missouri Pacific Railway Company, et al. In their syllabus in this case the Commissioners have to say:

"Rate of 47c per 100 pounds charged for the transportation of a carload of unglazed fire-clay roofing tile from St. Louis, Mo., to Mize, Miss., found to have been unreasonable to the extent that it exceeded the combination of intermediate rates to and from Jackson, Miss. Reparation awarded."

Among some of the other interesting items to the trade transpiring at the Commission since our last issue are the following:

A complaint has recently been filed with the Commissioners by the Coffeyville (Kan.) Vitrified Brick & Tile Company against the Missouri Pacific Railway Company and the St. Louis, Iron Mountain & Southern Railway Company; according to the facts set forth in the statement, during the months of September and October, 1909, one carload of brick was shipped from Independence, Kan., to Nettleton, Ark., and there rebilled to Monticello, Ark. Also a shipment of twenty-five carloads of brick was made from Buffalo, Kan., to Nettleton, Ark., and there rebilled to Marianna, Ark. The overcharge, according to the complaint, amounted to $1,167.92.

At the time the shipments were made there was no through commodity rate published from Independence, Kan., and Buffalo, Kan., to Monticello and Marianna. It is claimed that the rates were then and still are unjust and unreasonable. The complaint asks for an answer, investigation, reparation

(*Continued on page* 892.)

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Belt Conveyor Construction (Kent)

In the February 2 issue a chart was published, giving the capacities of belt conveyors and required horsepowers. Believing that a little more belt information will do no one any harm, we are giving some figures relative to belt conveyor construction.

Where the material is fed to the belt at its center, and in a narrow stream, the belt is flat. When (as in the majority of cases) the belt is troughed by means of idler pulleys, set at an angle from the horizontal of the belt, there is a problem to be faced, in the spacing of these idlers.

This depends, of course, upon the weight of the material to be carried, but the following will give the measurements within which it is safe to come:

Spacing for Troughing Idlers

Belt width (in.)	6-12	18-22	24-30	32-36
Spacing (ft.)	4½-5	4-4½	3½-4	3-3½

The stress in the belts should not exceed 18 to 20 pounds per inch of width per ply with rubber belts, but this may be increased about 20 per cent with belts in which 28 oz. duck is used. Where the power required is small the stiffness of the belt fixes the number of plies.

Minimum Number of Plies

Belt width (in.)	12-14	16-20	22-28	30-36
Minimum plies	3	4	5	6

Pulleys of small diameter should be avoided on heavy belts, as the constant bending of the belt under heavy stress will cause the friction to lose its hold, and this will destroy the belt. In many cases it is advisable to cover the driving pulley with a rubber lagging, to increase the tractive power, particularly in dusty places—and this applies to clay plants.

Smallest Diameter of Driving Pulleys for Belt Conveyors

Width of belt (inches)	Diameter of pulley (inches)	Width of belt (inches)	Diameter of pulley (inches)	Width of belt (inches)	Diameter of pulley (inches)
12	16-18	22	20-30	32	30-36
14	16-18	24	24-30	34	30-42
16	20-24	26	24-30	36	30-48
18	20-24	28	24-30		
20	24-30	30	30-36		

Boiler Furnace Facts

Keep the brickwork around the furnace tight. Daub with lime-plaster or mud and whitewash.

The ash-doors or the air entry to ash pit should be one-fourth the area of the grate surface.

The less the fire doors are open the less coal will be required to hold steam; each time the furnace is fired or cleaned the boiler is chilled. Cleaning especially should be done hurriedly on stationary grates.

Shaking grates will deliver the necessary heat with 25

per cent to 35 per cent less fuel if correctly installed.

Carry a thin bed of coal and fire light and often.

Don't neglect the use of damper; it will save many tons of coal per year, if its use is studied.

A simple flue-gas analysis apparatus should be installed; it also will enable the fireman to fire intelligently, and so save fuel and labor—which means money.—Otis W. Alton.

How to Get Hurt

See if you can oil your machine while it is in motion, or use you hand to slap on the gear grease.

Watch the boss while you are feeding the dry pan and, if possible, start a little friendly conversation above the roar.

Strike a match and light your pipe whenever you feel like it. Don't mind where you are, nor trouble to blow out the match. If you happen to drop it "sort of off-hand" near a gasoline or oil tank you may get your name into print.

Never tell the foreman that there are some bolts lost on the pan when you quit at night. He might want you to stay and help him adjust the machine. He will find it out soon enough "in the morning" when the fire-works start.

Don't fix up the broken steps on the kiln crown. It is more fun to roll down over the hot kiln.

Don't let anybody set you an example by working when you want to talk—a fellow working on an emery wheel might save his fingers by attending to his work, but that is not so terribly important.

Never block an empty on a grade. You may be there when it rolls down and over the de-rail.

Use an old piece of gas pipe to support a die when making a change. A little slip will knock the pipe out and give you a chance to walk around on three feet for a week or two.

Be sure and use a light, slender bolt to hold the hollow-ware die; you may be right in front of it when it breaks and be the target for the tap when it starts on its journey of discomfort.

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

"Brick and Clay Record's" Editorial Policy.

The following letter, written under date of April 27, by Stanley E. Bates, of 6517 Yale Avenue, Chicago, is interesting:

Having been a reader of your magazine for some time past, the opening paragraph of a recent article engaged my interested attention. That was in the issue of April 6, 1915, under the heading, "Chicago Adds Twenty Miles to Her Fire Limits," and read as follows:

> "Extending the fire limits in almost any city gives prominence to several industrial conditions. Principal among these are the solidarity of the lumber interests and the lack of co-ordination in all branches of fire-resistant construction material."

Such a statement occuring in "Brick and Clay Record", with its pronounced and, may I say, somewhat acrimonious editorial policy, gives food for some thought.

Had the article been a contribution from one not connected with the magazine, it might have been passed with less notice. However, I am convinced otherwise, and consequently several questions come to my mind:

Is the editorial policy of "Brick and Clay Record" subject to modification when special need or occasion requires? This seems hardly likely, else the Edison fire would have been hailed (truthfully) as a triumph for *all* fire-resistant materials of which brick and concrete are two striking examples.

Did the editor in his mingled gratification at the addition of 20 miles to Chicago's fire limits and his regret that these twenty miles were not 40, make a slight slip from his usual careful policy? No.

Does this presage a slight modification of the old and established policy of the "Brick and Clay Record"? Is it the incipient change to a more liberal and conciliatory attitude with regard to other fire-resistant building materials? Has the "Brick and Clay Record" at last begun to see the possibilities of co-operation as opposed to the policy of consistent and unyielding militant competition and tentatively—almost undetectably—stretched out the olive branch to the heretofore despised competing materials?

It may appear like effrontery to hazard such a presumptuous thought, yet as the idea has been with me for a long time, it is not strange that I find great satisfaction in what may turn out to be the first indications of an ultimate harmony.

Nowadays we hear much of the advantages of peace—peace in industry as well as peace between nations; for there is a striking similarity between the two. War is sometimes unavoidable, no doubt, but peace is none the less essential to progress. Has not the time arrived for a permanent cessation of hostilities between those industries engaged in the manufacture of various building materials so that each may pursue its natural development to the fullest degree? I, for one, believe it has. In fact, I believe that harmony should have come years ago so that now we would be enjoying its benefits instead of enduring the rigors of acrimonious competition. I will watch further numbers of your magazine in expectation of further and more rapid advances toward ultimate concord.

If Mr. Bates is a constant as well as an interested reader of "Brick and Clay Record" he must have read the editorial pages in the March 2 issue, which followed immediately on the issue containing the "brick angle"

of the Edison fire. In those editorial pages, the editorial policy of "Brick and Clay Record" was definitely given. *It was, that every fire-resistant material had its place in building construction, and that the only logical lines of offense and defence that brick or other burned clay products had, was against the extended use of wood in residence construction.*

If this be called a "tentative—almost undetectable" holding out of the olive branch to steel, cement, gypsum, asbestos and other construction materials that are fire-resistant, we shudder to think what it would be necessary to say, to convince Mr. Bates that we are alive to the folly of advertising a competitor by calling him hard names.

A constant and careful reader would have seen, likewise, that the treatment accorded the Edison fire was called for by the extravagant claims that were made for concrete at the time of the fire, and later—Mr. Edison's signed statement being used, even today, to spread the impression that there was a salvage of eighty-seven per cent in buildings that had been subjected to temperatures to which no concrete has ever gone, and come out eighty-seven per cent untouched. It is to be recalled that we said cement-concrete had been inexpertly used at West Orange—intimating that, had it been used properly, it would have given a better account of itself—a testimonial, in itself, for a material that has proved one of brick's most powerful competitors, in fields where brick once held undisputed sway.

A Boost for the S. A. F. E.

Having turned over the active management of the Hinde Brick and Tile Company, of Sandusky, Ohio, to his son and son-in-law, James J. Hinde has transferred his sphere of activities to Cleveland, where he has an office in the Guardian Building. Writing in connection with the series of articles that recently closed in this magazine, and which had "Burned Clay vs. Lumber" for their title, Mr. Hinde says:

Nine-tenths of the brickmakers in the country cannot consistently advertise that brick is better than wood, because they do not use brick in their own structures. Excepting the kiln itself (and very often that has a wood roof and side walls made of lumber) there isn't a brick structure anywhere around the plant. I am quite safe in saying that three-fourths of the brickmakers in the country are living in frame houses. Nine-tenths of them couldn't cover their plants with insurance at all, except that the local insurance agent is a personal friend, which enables them to put their heads together and fill out a policy that carries an exorbitantly high rate. The agent gets a commission, and the brickmaker gets some protection, but if the brickmaker had to change places with the insurance company, he wouldn't carry that risk for 99 cents on the dollar.

Regarding the Read and Day articles, I take exception to the way they treat the matter of comparative costs, when they write:

"Brick men say that a small frame house can be reproduced in brick for an advance of ten per cent. Let us, to avoid argument, say that it can be reproduced for an advance of twenty-five per cent."

This inclines one to believe that your authors haven't very much faith in brick. If the brick men are in the right, the more argument the better. If they are not right, we want to get at the fundamental facts, so that none of us will be led into misrepresenting what we are trying to sell.

In the second article, published in your April 6 issue, Read and Day speak much of a prejudice in the minds of the public in favor of wood. This is wrong. There is no prejudice in the public mind. There is a woeful lack of knowledge as to the merits of fire-resisting materials. And this brings up the question of the S. A. F. E. —a society that is devoting its time and collective thought to this one end, that the public mind may be enlightened as to the merits of burned clay and all other fire-resistant materials, and to the danger of building with wood.

The trend of thought, as expressed by Read and Day is that burned clay houses cannot be built as cheaply as frame houses can. They had better come to Cleveland, where we can prove the statements we have made, which are that the excess initial cost of brick construction is so close to the initial cost of frame construction as to be easily off-set by the repair costs, and in a few years.

Apparently Read and Day have a leaning toward "domestic architecture." The best in architecture, as in art, comes to us from the Old World. The writer, as a brickmaker, and as a builder, will guarantee to reproduce any style of Old World residence at much less than ten per cent over the cost of the same structure in wood. There isn't any sane person, in these days, when economics is being so strongly advocated who will want to make comparisons between the brick equivalent of a jim-crack frame house and the jim-crack frame house itself.

The question resolves itself into one point—is it possible to produce, and show, side by side, *average* frame houses, that are well built and sensible (aside from the fact that they are built of wood) and houses of the same number of rooms, and similar cubic measurement, built of brick, with inner partitions, floors and roof of fire-resistant material.

And, having found these, to secure actual cost figures—that is, just what these houses cost, when completed.

These figures will be worth volumes of "bids"—for we all know what "bids" amount to. It is the "extra" that counts.

And we must not forget that Read and Day have brought out a new thought—a house is *not* a "brick" house, and fire-resistant as "brick" houses are claimed to be, unless it have a fire-resistant roof, fire-resistant partitions, and fire-resistant floors.

That is the kind of a "brick" house that Read and Day are doubtful about building in ten per cent more than frame.

Praises "Burned Clay vs. Lumber"

It is "Brick and Clay Record's" good fortune to have readers who are willing to take their pens "in hand" and write a few words, now and then, to keep the editor from going astray. One of these good friends is Dr. G. C. Mars, of the Hydraulic-Press Brick Company, of St. Louis. Under date of April 23, he writes:

The last issue of "Brick and Clay Record" came to my desk yesterday afternoon and I at once read the last of the series by Messrs. Read and Day, to which you referred in your letter of the 20th inst.

In the main, these articles are very good and I have referred our Branches to them. It would be interesting to take up the various points they make, but I believe nothing more could be said than has already been said many times on the same subject. The formation of a central bureau, where all information regarding the interests of brick could be cleared and distributed on time to brick men would certainly be very valuable, but the mere outline of such a plan is very much different than carrying it through in a practical way. It is too much like a counsel of perfection, which is very easy to give, but rather hard to carry out.

It would be interesting to go over these articles in detail, emphasizing some points well taken, and correcting some others that are a little too cavalierly treated. On the one point of excess, in the cost of brick houses over frame, the authors point out certain weaknesses in the brick argument which have been recognized by practical brick salesmen, but the subject has too many phases to be discussed in a letter to advantage.

You certainly should be highly commended for your effort in bringing these suggestions forward, and the gentlemen who have undertaken to cover them, certainly touch the points considered with knowledge and discrimination. I have no doubt these articles will do brick men a great deal of good, not only in stinging them to a

greater enthusiasm along certain lines of attack, but also in correcting some of their defects.

I have already made use of these articles and shall make further use of them with our salesmen. That is, of course you understand, on the basis that their attention has not already been called to them. I think in general, it must be admitted that repetition is a necessity of education. You find men who blankly look you in the face and, with the utmost confidence reel off a line of dope which indicates entire oblivion to what has been repeatedly passing under their noses.

We are very grateful to Dr. Mars for his frankly expressed opinion, and feel that the Read and Day articles have reached their mark in many cases. They have brought out a number of good thoughts, some of which we print on this page—some are held for another number.

Believes in Local Publicity Plan

Everyone who went to Detroit remembers "Bill" Wreford. Those who came into intimate touch with him know that the organization of which he is the manager—the Detroit Brick Manufacturers' and Dealers' Association—is a most successful body, and that it owes much of its success to its habit of following the suggestions of this same "Bill" Wreford. So it is interesting to read what he writes, under date of April 24:

I have read carefully, and with a great deal of interest, the articles by Messrs. Gardner Read and E. Winfield Day, and congratulate them on the articles, which are carefully prepared and contain many worthy thoughts. I likewise offer you congratulations for your enterprise in having the articles prepared and printed. There is just one thought in my mind that might take the form of a correction, that being the fact that the campaign to be started, if one is started, by the Committee of Ten, will be one for brick, not burned clay. This was the trend of conversation during the committee meetings that have been held, and in making this statement I know I voice the sentiment of the committee considering the matter.

I am not in accord with the national advertising or publicity campaign plan, but rather the organization of associations similar to the one which we have in Detroit, and the employment of one national secretary or manager for the purpose of continually organizing similar organizations, and he to spend his time visiting the various localities, assisting the various associations in their difficulties, as in each locality circumstances will be found to vary. The national secretary or manager's office should serve as a clearing house for information, publicity and advertising "stunts," which could be revamped in each locality to suit conditions as they exist. This plan of campaign could be conducted more economically, and I believe with greater results to the various localities.

It would appear that Mr. Wreford's predictions had come true, and that the "national publicity movement" for brick would be *for brick* and not for anything else. This being the case, then Mr. Wreford's idea of a separate organization in every brick producing center is correct. This would bring immediate results, and would appeal strongly to every individual, since it would paraphrase the slogan, saying "When You Build—Build with *My* Brick."

Deplores Lack of Plans for Brick Houses

Much space and considerable thought has been given in these columns to the discussion of so-called "canned plans." The architects' plea that ready-made plans would deprive their fledglings of the worm, without which they would straightway die, has been entered, and the effect of this attitude upon the average brickmaker has been shown in the latter's desire not to employ ready-made plans to secure orders for brick. Granted that the employment of an architect will more than repay the prospective builder in the added beauty of the structure when completed, and in the saving in the actual cost of construction, there does seem to be a low limit in prospective cost of a building where the employment of an architect puts an unnecessary burden on the builder, especially if he be of moderate means. The adaptability of frame to very meager plans seems to give wooden construction an advantage over burned clay in low-priced dwellings. Adolph Lippman, of Maryville, Mo., writes us on April 25:

Your favor of April 23rd is with me, and also the literature relating to concrete and tar pavements. This reading matter has been placed where it will do the most good.

My impression is that the cement man never would have had a "look in" on the paving proposition here in Maryville if matters concerning brick pavements had been correctly and intelligently presented to the purchaser. I believe that salesmanship of a high order would land the "plum" for the brickman much oftener than not. Of course, the lumber dealer tries to jog along on the lines of least resistance, and cement coming in larger units than brick, it is but natural that he pushes the former on every occasion.

Well, you certainly hit the bull's eye in the "Editor's Corner" of the April 20th issue. Plans for frame houses, many of them drawn to the minutest detail by first class men in their profession, can be had for anywhere from fifty cents to Five Dollars. Where 999 plans for frame houses are thrown at you, only one for brick construction is to be seen.

Such being the case, should it occasion any surprise that people make use of lumber in building their houses? Besides this, anyone partial to brick, who has found a suitable frame plan and desires to have the same worked over so as to answer for brick construction, is at considerable expense and delay in having this done, there being no architects in the smaller towns, and not all prospective home builders have the knack of putting their ideas on paper.

Last fall I had a prospective tenant for a small house, 26x31 ft. in size and containing a living room, kitchen, two bedrooms and bath. The plan was worked out fine in frame, and my client was much pleased with it. I figured the cost in brick to be close around $2,000, and the rent of $200 being entirely satisfactory, I considered the proposition to be a good and sound investment from any standpoint.

I submitted the plan to a firm of architects, and was informed the change in plan to brick construction would be 3½ per cent of the total cost of the house. This would be about $70. The ground on which I proposed to build this house will permit of three houses similar in size being built thereon, and not wanting all three to appear alike, nor willing to pay the price of three separate plans, caused me to give up the idea of building the house. I could obtain exactly what I wanted in frame construction, but knowing that matches are made of wood, I failed to build the first house. The cost of plans for inexpensive brick houses did it.

In the April number of the "National Builder" I noticed a good plan in stucco, drawn by William Arthur Bennett, of your city. The plan is compact, without any frills, and only one projection, and I believe could be worked out to good advantage for brick. I asked Mr. Bennett what the price would be to change the plan, and was informed that it would be $50 without additional expense for sketches showing minor changes in plan arrangement. Now, then, this is not unreasonable for a good set of plans. At the same time, I make the assertion that not many home builders will pay this price, when they can obtain the same plan worked out in frame for $5. I have called attention to my own case, and I guess human nature is about the same everywhere.

It is possibly true that the difficulty of obtaining suitable plans for inexpensive brick houses or homes, at small cost, has prevented many from using brick to build their houses. I mean houses that can be built for $2,000. Adding the cost of a lot for houses of this kind, they can be rented out for $200 per year, which makes them good investments, more especially if a little more thought and expense were given to making the floor fireproof or of fire-resistant materials. With this accomplished, insurance and upkeep would be reduced to a minimum, in fact, nothing but the roof and window sash and doors could be destroyed in case of fire. This type of dwelling is in constant demand.

The matter of plans disposed of, it becomes necessary

for the brickmaker to actually demonstrate the fact that frame houses of a given size can be duplicated in brick for something like 10 or 15 per cent more money. To say this in the trade journals and newspapers is all right, but it would be much more to the point if a dozen houses in that many cities were erected and could be shown as examples of what can be accomplished along this line. Men building for investment want to know if a reasonable rate of interest can be regularly expected from the investment. The man building a home is in a different class entirely.

It is rather strange that the brick manufacturer should fear the architects. Not many of them care to bother with the planning of inexpensive brick houses or homes. And twenty of the latter would be built where there is only one built now. Nobody thinks of frame in connection with the more prominent buildings and factories. This being so, why be afraid of the architects?

Your statement relative to inducing brick masons to locate in the smaller towns is well worthy of serious consideration by every brick manufacturer. As you say, these men should have the ability to at least change a frame plan into one that calls for brick construction, if it seems feasible to do so. There is a man here in Maryville who can do everything in the bricklaying line, if furnished with a plan to work by, but when it comes to changing a plan he is a rank failure.

As for myself, I do not care to build anything unless I can see a plan that will show what I am going to get under the contract I am making.

Being much interested in the building of inexpensive houses of brick and hollow tile, I trust you will take what I say as being typical of a need that is felt by many others. Possibly at no distant day "Brick and Clay Record" will devote more space to sketch plans and suggestions for small houses, all, of course, to be built of burned clay. If it does this, it will be following the example set by dozens of publications that are giving similar space to the illustration of frame buildings of the same class.

It may be that the time will come when this magazine will publish plans such as Mr. Lippman suggests. It may be that some organization of burned clay products manufacturers—or of manufacturers of all fire-resistant materials clubbing together—will compile a collection of plans that would be comprehensive enough to be useful to the man who wants to build for investment, as well as one who wants to build for his own occupancy. In the meantime, the mason contractor should be encouraged to take a "correspondence course," if necessary, in the rudiments of architectural drafting.

S-A-F-E and S-A-N-E

Those of our readers who go to conventions are familiar with the personal attributes of the genial secretary of the Society Advocating Fire Elimination. Those who have not been so fortunate, know something of his work, particularly through the clever articles he wrote in this magazine, under the title, "Publicity or Free Advertising." What he says now, therefore, is said as from one friend to another. In a letter dated April 19, he writes:

A man holding four aces and playing a straight game need not fear to show his hand. At least, that is the way it seems after reading the series of articles by Gardner Read and E. Winfield Day, just concluded in "Brick and Clay Record."

It appeared, at first, to be daring, and possibly indiscreet, to give the lumber men some good talking points to use in their threatened "campaign of education." The publication of the series should convince everyone that "Brick and Clay Record" takes its task seriously, and is fostering the interests of burned clay in a big, broad way.

I have re-read the series no less than three times, and I wonder how many brick and tile manufacturers have made a similar effort to get all of the nutriment out of it.

In the first installment the fire-insurance argument is convincing. The differential between frame and brick is not the same in all cities, however, and brick manufacturers using these arguments will do well to post themselves on local conditions.

The "Jess Willard" of the series is put across in the second installment. In it the authors say:

> "A brick house with a shingle roof is almost as much exposed to fires that start outside of its walls as a house that is entirely of frame. * * * When it comes to considering the safety from fire of a house constructed of brick or hollow tile exterior walls and with burned clay tile roof, but with wooden floor beams, wooden interior partitions, windows, doors and stairs, the lumber man and the brick man both have a most delicate subject to handle."

Now since the authors, in conclusion, put fire safety as the first argument for brick, the subject touched upon in the two quoted paragraphs becomes the vital point of the entire discussion.

If the proposed national publicity movement of the brick interests is to embrace hollow tile, and the two are to enter upon a campaign against the use of wood in residence construction, making the fire-menace of frame construction the objective point, they will not be able to avoid the question of the fireproof roof. And, if, in doing this they stick to the burned clay tile roof they will overlook a bet. While the clay tile roof is perhaps the best roof known it costs money, and is not suited to every style of architecture. Especially for the cheap house, brick publicity must either suggest fire-safe roof coverings that are cheaper than clay tile, or carry the burden of the extra cost into their comparative figures.

Then, how about the man who likes the appearance of stucco, combination of brick and stucco, or the English half-timber effects? Should he not be included in the field of home builders that the brick and tile men want to reach?

Putting fire safety first, can the brick and hollow clay tile publicity assume that a residence of hollow concrete block, or of reinforced concrete, or of metal lath on steel frame, is less safe from the ordinary fire than is brick and tile?

It is a very short step, you see, from the perfectly S-A-N-E idea of Messrs. Read and Day to the S-A-F-E idea, which is very close to my heart. The burned clay manufacturers, or anyone else interested, or pretending to be interested in fire-prevention, should first recommend fire safe construction throughout—not any special material—but any accepted and approved fire-safe material. And, realizing that not every man can afford to build a house that is fire safe in every detail, they should advance, as absolutely essential, that the exterior of every home be fire safe. And that means the roof and the walls, with first importance given the roof.

This, in short, is the S-A-F-E creed, and Read and Day have hit the bull's eye.

The position of this magazine has already been defined. Publicity, to be effective, must be forceful. The materials that have always been considered as competitive to brick have been, in the main, fire safe. The greatest of all arguments for brick could not be used against them, for they used the same arguments in their own sales talks. The S-A-F-E pointed the way to an extended use of all fire safe construction material—the use of a sales argument that all could use alike. As Mr. Stoddard says—there is a great similarity between the S-A-F-E idea and S-A-N-E ideas advanced by Messrs. Read and Day.

Don't Overlook the Small Courtesies

Our South American friends say that our way of doing business is too abrupt—that we do not observe the finer courtesies. Read the following, from R. C. Gangewere, of Chattanooga, Tenn.:

On the article I wrote for you, and which you recently published, I received a number of letters, asking for more information. I am willing to give these people the benefit of all that I know, but I do think they ought to be willing to enclose a stamp for reply. I will be pleased if such mention could be made in your valued journal.

We take a very great pleasure in acceding to Mr. Gangewere's request. These men who "forget" to put in the stamp are the ones who always telegraph "collect."

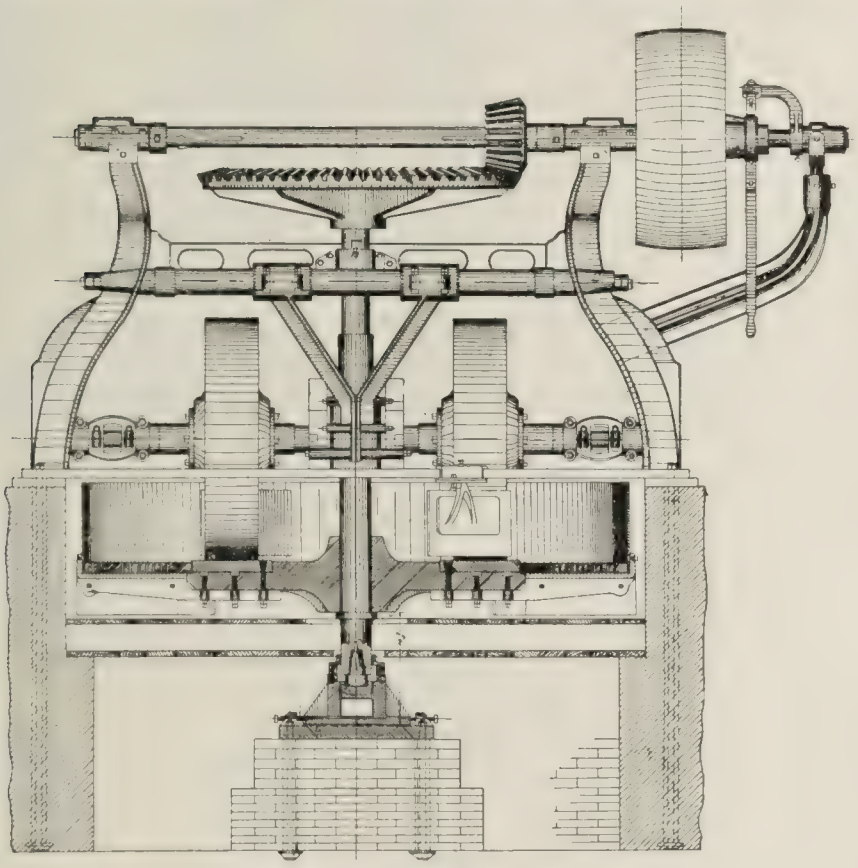
Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Pioneer Pan Builders

On the front cover of this issue of "Brick and Clay Record" is an illustration (similar to one on this page) of Stevenson's latest ten-foot dry pan.

This pan is built for heavy duty and its manufacturers claim for it the greatest daily capacity of any similar size pan on the market. The pan is built and founded on experience, and is designed to resist the troubles that dry pans are usually heir to.



Stevenson's Ten-Foot Dry Pan

For example: there are few manufacturers who have not had vexing delay due to step and toe troubles, and to obviate this the Stevenson Co. has designed and constructed this support of tool steel and bronze so that it supports the pan; it works and it runs *cool*.

The shafting is adjustable, it is always in alignment, and worn gears can always be made to mesh perfectly. The screen plates are tough and it is difficult to knock a hole in them even with a heavy hand hammer as the metal is tough, not brittle, and it withstands the battering that it gets ten hours a day.

All other parts of the pan are of equally superior construction.

The Stevenson Co., Wellsville, Ohio, stand back of this machine and all other machinery made and installed by them and guarantee it absolutely.

They are the pioneer pan builders, manufacturing five different sizes in both wet and dry pans; also sewer pipe and tile presses. They furnish plans and millwright for erecting machinery. Theirs is the only electrically equipped plant of its kind in the country, and the fact that each machine is motor driven, makes for the lowest cost of manufacture.

They will be glad to send catalog and full information to interested parties.

Mechanical Counters

Every superintendent and manager knows the aggravation of "counts" that do not check or tally with books at the time of the monthly and yearly inventories.

These mistakes are general on all yards, and often are very costly in time and labor. The writer has in mind a plant that found it necessary to charge off 5,000,000 brick that were shown to be "on stock," because a long series of inventories differed from the stock record by 5,000,000 brick, and did it consistently.

It is just as necessary to keep an accurate inventory on a rough brick or tile yard as it is in our tool factories, but seemingly because a brick is "just a brick" this point is neglected.

The Ceramic Supply & Construction Company, Columbus, Ohio, has gone into this thoroughly and now has for market a series of counters for each and every operation that should be counted.

Cars on track, whether clay or coal cars, from pit or mine, the loaded dry car going into drier, the loaded car going into kiln, loaded wheelbarrows going from kiln to pile, or car—all counted accurately by four different kinds of instruments, although some of these instruments can be used on each operation.

In addition to above the Ceramic Supply & Construction Company has a counter to be used between the auger and the cutter, to count the number of brick cut each day.

You should have one or more of these appliances, to help you learn more concerning your plant and give you accurate data as to where to locate the waste in your yard.

The "Plymouth"

To meet a general demand for cheap transportation of clay from pit or mine to plant the J. D. Fate Co., Plymouth, Ohio, has evolved the "Plymouth," a gasoline industrial locomotive that "pulls."

This locomotive is built low so that it is admirably adapted for clay mine work, and still is heavy enough to have the necessary traction to start and haul a loaded clay train.



Plymouth Locomotive Entering Clay Shed at Fredonia (Kans.) Brick Co.

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff Strongest and most durable

Manufactured by

C. K. WILLIAMS & CO., EASTON, PA., U.S.A.

Correspondence solicited

H. M. DEAVITT, *Ceramic Chemist*

209 South LaSalle Street, Chicago

Best equipped consulting laboratory in the West for the analysis of clays and clay products.

Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.

Expert examination of deposits and plants a specialty.

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

Our business is diagnosing and remedying

TROUBLES

of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult

H. & B. COPPING, Kankakee, Illinois

We personally do the work.

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

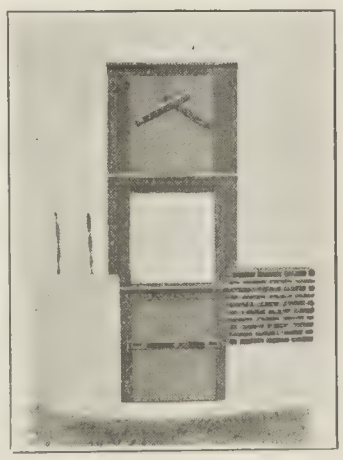
ZOOK SILO FRONT

It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.



G. W. ZOOK

BUFFALO KANSAS

This type of industrial haulage is fast gaining in favor due to the possible economies, and flexibility.

Dozens of Plymouths have been sold and are no longer experiments, but real successes.

A letter from Thos. D. Brown, manager of the Haydenville plant of the National Fire Proofing Co. follows and is an average sample of the regard that this machine has built for itself:

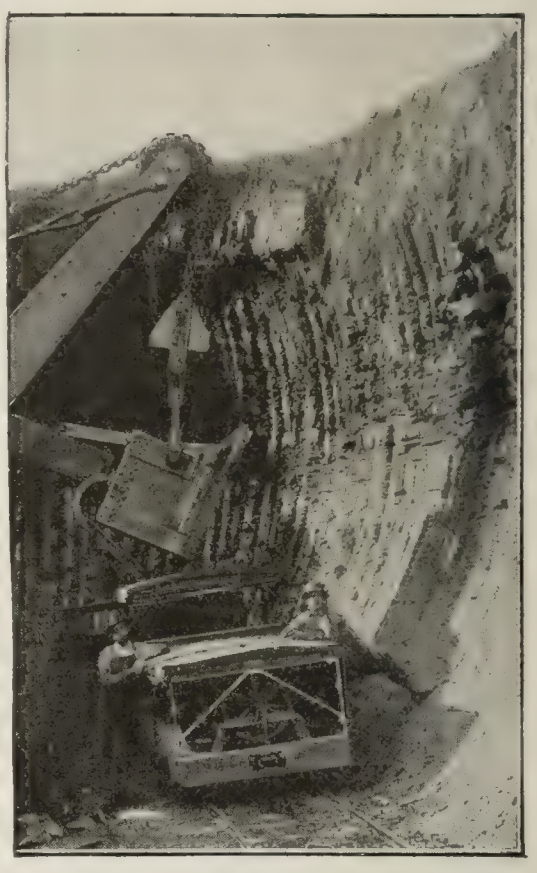
Haydenville, O.,
March 3, 1915.

The J. D. Fate Co.,
Plymouth, O.

Gentlemen: — Replying to yours of the 26th, beg to say that the gasoline locomotive has now been in service almost one year and the results of its operation have been entirely satisfactory.

In the months of July, September and October, which we selected as being typical, of the year, this engine handled 29,521 tons of material, at a cost of 2.4 cents per ton.

Its average consumption of gasoline is 5 gallons, with about ½ gallon of Polarine, and the usual other lubricants for bearings.



Plymouth Three-Ton Gasoline Locomotive at Shale Bank of Fredonia (Kans.) Brick Co.

Yours very truly,

National Fire Proofing Co., Thos. D. Brown, Manager.

The J. D. Fate Co. has just issued a new catalog containing detailed description of this locomotive, and copy will be mailed on request.

Dryer Cars

There is no part of the equipment in use on any kind of a brick yard that receives more severe, hard knocks than the dry cars. They are in service almost twenty-four hours every day, and in that short ten or fifteen minute period between kiln and offbearing table when they are empty, and ready to carry another two ton load, they are still subjected to repeated batterings by some enthusiastic, strong-armed ruffian who loves to hear them clank.

Figure 1 in their catalog shows how the bearings are designed for cars made by the Chase Foundry & Manufacturing Co., and particular attention is called to their flexibility. A roller bearing that is flexible and still does not increase friction means that the bearings are always in alignment.

The illustration of their car also shows the advantage of the folding deck, particularly in the kiln where tossers on both sides of car have equal ease of access. Rigid decks are furnished if desired.

All corners are reinforced, and the metal used is of sufficient thickness to resist hard service and action of moisture and sulphur gases in tunnels.

The Chase Foundry & Manufacturing Co., Columbus, Ohio, also make, of equally strong construction, a line of transfer cars, both hand-power and motor-driven turntables, and any class of dry car desired. They have a catalog you ought to send for.

New Type of Pyrometer

The Féry radiation pyrometer, an instrument for measuring temperatures, is so similar and yet so dissimilar to the other types of pyrometers that a study of it proclaims it little short of marvelous.

The Féry radiation pyrometer and the Le Chatelier pyrometers, both base their action on the following points: If two different metals are jointed together and heated, an electromotive force is generated, and this generated current is proportional to the rise in temperature at the junction of these two metals.

This current, although small and weak, is measured in millivolts and inasmuch as the increase in voltage is proportional to the increase in heat, the dial is calibrated to read in degrees instead of millivolts.

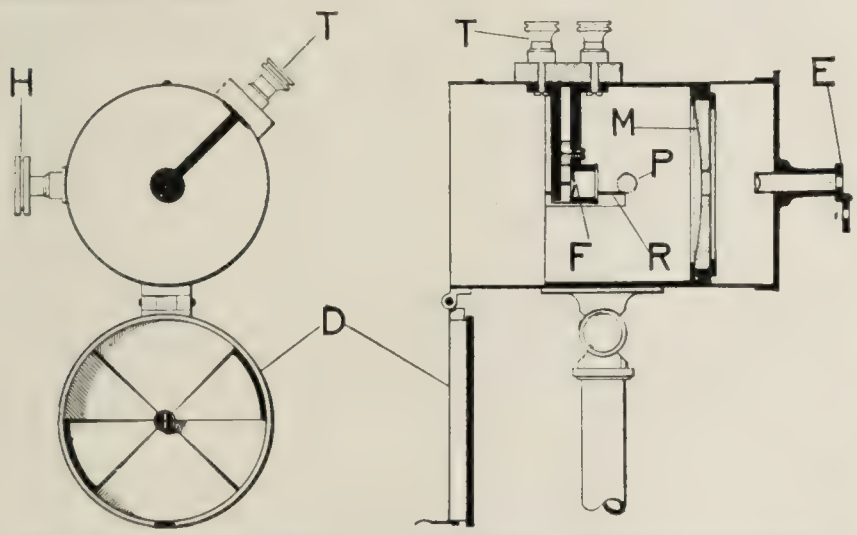
In the Le Chatelier pyrometer the couple of metals is usually inserted in a fire clay or porcelain tube, or both, and this needle is inserted into the kiln so that the point of the needle is at the point where the heat is to be measured and indicated on the instrument outside.

The Féry radiation pyrometer overcomes the objectionable features of actual contact with heat, as is necessary in other types of pyrometers, by the practical application of the principles of radiation of heat waves.

All bodies radiate heat to surrounding bodies. Heat rays can be collected and brought together at a focus, just as light rays can. The well known burning glass is an illustration in which the rays of the sun are focused on one spot, and the focused rays of heat quickly cause the object to come to kindling temperature, and combustion ensues.

The same thing which can be done with a lens can be done better with a concave mirror, and for that reason a mirror is used in the Féry radiation pyrometer.

This mirror focusing the heat rays on the thermo couple *contained in the instrument,* not in the kiln, causes the same action to take place, namely, an E. M. F. is generated that is measured and is proportional to the amount of heat.



Sketch Showing Method of Using Féry Radiation Pyrometer

Operation: The instrument is pointed or sighted at the peep hole in kiln (ten or fifteen feet distant from kiln) and the heat rays given out by body heat of kiln are brought together at a focal point, at which point is located the rare metal couple, and this couple is heated by the heat rays in proportion to amount of heat in kiln. A current is thus generated, and the intensity of heat is indicated on the dial or on the paper roll of a recording instrument.

Catalog and information regarding the full line of Tycos pyrometers may be obtained from The Taylor Instrument Companies, Rochester, N. Y.



"It is but just that we state our success with Cling-Surface. Before its use, we seriously contemplated buying a new engine, because we did not have enough power to run our drop-hammer. After lengthening our belts and applying Cling-Surface, however, we obtained more than enough power to run our hammer and all our other machinery besides."—Wm. Didier Mfg. Co., Racine, Wis.

CLING-SURFACE CO 1029 Niagara St **Buffalo N Y**

83

Give Your Brick A Fair Chance

Use the same care in sending them out as you do in selecting them.

The Hinde-Dauch Corrugated Container

provides the way—sure protection, economical and convenient. Made in various sizes to meet your requirements. A sample is here waiting for your request.

The Hinde & Dauch Paper Co.

Sandusky, Ohio



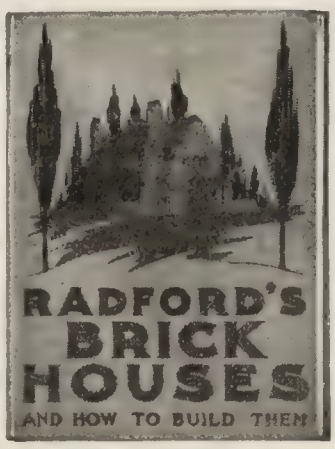
THE IMPORTANCE OF DRAFT CONTROL IN BURNING

Cannot be overestimated. For many years we have made the

Best Draft Gages for Kilns.

The Ceramic Supply & Construction Co.

COLUMBUS - - OHIO



Brick Houses

And How to Build Them

A book containing 219 (8x11 inch) pages illustrated by over 300 designs and details of brick house construction, beside perspective views and floor plans of 82 brick houses with estimates of cost construction and miscellaneous data about the use of brick from its manufacture to its placing in the building, including ornamental brick and tile work, sewer construction, fireplaces, brick veneer construction, arches, cements and mortars, how to estimate the cost of brick construction, etc., etc.

The houses shown are all of artistic design drawn by leading architects and show what can be accomplished by the use of brick as a building material.

Price, Postpaid $1.00

Book Department *Brick and Clay Record* Chicago

Cutting WIRES Screen

Tough—Twisted—Wrapped—Strong

ANY Size or Length IN Coils or Looped

It's the wire for you because it saves you money. It's the wire for your foreman because it saves his time and temper.

Send for Samples.

Specialty Wire Co.

2009-21 Clybourn Ave. Chicago

"The Tanks with a Reputation"



Hoop Lugs made by **Caldwell**

will never slip or give way. They are the only "positive grip" lugs on the market. This lug does not depend on friction to hold it, as other lugs do.

Our catalogue of Tanks and Hoop Lugs, contains illustrations giving full details. Let us send you a copy and make you prices.

We can ship promptly.

W. E. CALDWELL CO., Inc. Louisville, Ky.

Tanks (*Steel-Wood*) **Towers** (*Galvanized*)

Wind Mills—Pumps—Gas Engines

Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY

1229 Insurance Exchange Bldg., Chicago

General Traffic Association

Incorporated

Woodward Building, Washington, D. C.

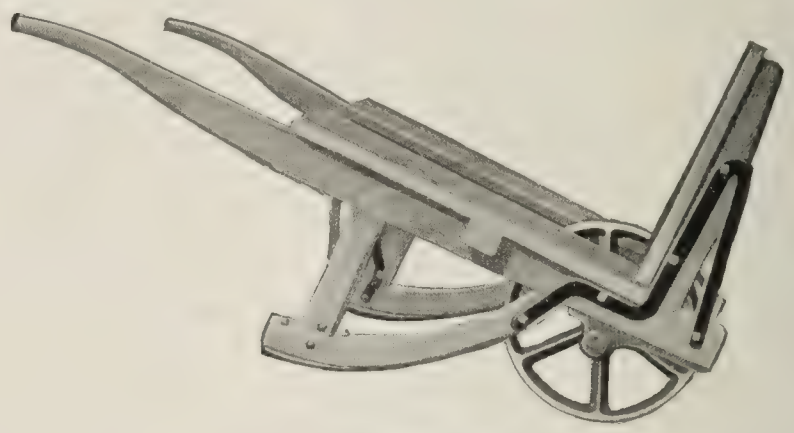
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

Wheelbarrows

It is difficult to write a description that tells a story of just a "brick barrow," but show the accompanying wheelbarrow picture to any wheeler on the plant and he will want the barrow without another word from the manufacturer. Try it.

The buggy or barrow is *right,* not only for the buyer, because it is strong, but for the *wheelers,* because it is balanced correctly.

Notice, first, where the axle is located. It is placed in



The "Invincible" Barrow

such a position that when the barrow is loaded and lifted it bears 90 per cent of the load, just enough weight being left on the hands to steady and make guiding easy.

Wheeling with it doesn't break a man's back, and from 10 to 15 per cent more brick can be wheeled in a day, because it carries the load alone. Wheelers say, "That buggy *rides.*"

Another point that the men like is the bent wood runners. They do not stick in the dirt, or catch on obstructions, and are easy to slide on the car runway.

The above points all favor the workmen particularly, but with all this it is stoutly built of seasoned white oak, with babbitted cast-iron bearings, bent wood runners, cast-iron slide shoes and wrought iron braces throughout. It is hard to beat.

Our attention has been called to one plant that has two of these barrows in a fleet of twelve, and each morning there is a scrap among the piece workers to see who will get the two good ones. Write to the Toronto Foundry & Machine Company, Toronto, Ohio, for more complete information about this wheelbarrow.

Prosperity Returning

J. Howard Chambers, president of Chambers Brothers Co., manufacturers of brick machinery, Fifty-second St., below Media, Philadelphia, reports that business has assumed a most favorable outlook, and that there has been a decided increase in the volume of business transacted during the past month, as compared with that of the several previous months. Mr. Chambers is of the opinion that this revival of business is of a permanent nature, and that it will be some time before another wave of depression, such as business men have just experienced, makes itself felt.

The Chambers Brothers Co. has been working upon a large briquetting outfit, which is to be sent to Chile, South America, to be used in a new brick manufacturing plant now in the course of construction. This is an extremely large order, and has kept the plant going at full speed for some time past.

The Richmond Brick Co., of Staten Island, Borough of Richmond, New York City, has recently purchased a suspended dry pan from Chambers Brothers Co.

Our Pottery Exports

If Wasteful Manufacturing Methods Are Eliminated U. S. Potteries Will Command all American Markets

THE BUREAU OF MINES, Department of the Interior, considers that industrial affairs in Europe will be very slow in returning to the condition prevailing prior to the war, even though hostilities were to immediately cease. It is thought by this Bureau that the forces of trained workmen will be seriously reduced, and that many of those who return will be unfitted because of their injuries to take their former places. New men will have to be trained for the work, and the number of young men will be very much smaller than heretofore. Operating with inefficient or semi-skilled labor is expensive in the ceramic industries, owing to the danger of breakage and the consequent decrease in production. The expense of restoration, which will be heavy, must be added also to the other expenses, and this will undoubtedly increase the selling price of European ware.

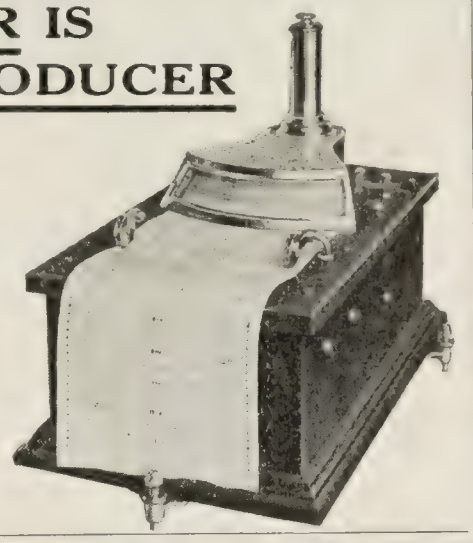
While these conditions will directly benefit American manufacturers, the competition will probably be one of quality rather than price. The European manufacturer it can not be anticipated will give up his American customers without a great struggle. The lack of money in Europe will make American business particularly attractive, and he will seek this new business to replace the losses in Europe.

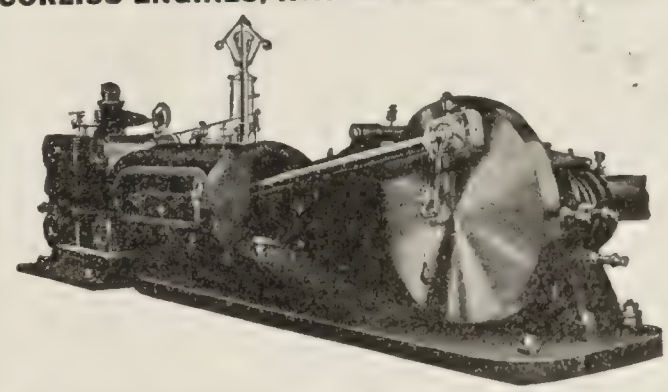
The American manufacturer has at the present time no foreign competition in his own country, but it is certain that competition will return within a reasonable time under conditions, however, more favorable to him than they have been heretofore. Our manufacturers therefore have an opportunity to profit by the opportunities that they now enjoy if they take hold of the situation promptly.

At this time especial attention is called to the wasteful practices that are frequently present in American factories. This relates to both material and labor. The arrangements at many plants are such that the ware must pass the same point frequently in the manufacturing process. The ceramic manufacturer of the United States should make a sincere effort to come up to the European standard of quality and efficiency and this being accomplished, he should be in a position to compete successfully for all the business of this country.

Ceramic manufacturers of the United States are just coming to appreciate the possibilities of the export trade. In South America the demand heretofore has practically been supplied by Europe but this demand is now unsupplied owing to conditions abroad, and temporarily can be filled by producers in the United States with little effort. The business having been once obtained, however, it should be our aim to so care for it that it will not desire to return to the foreign source of supply. When Europe again seeks the business, to insure this condition will require not only especial study of the needs of foreign customers but particular attention to their methods of conducting business. As this business has been attractive to the European manufacturer it is possible to make it so to the manufacturers in the United States.

Increased Efficiency *Greater Economy*
Results obtained from use of
"Fuller Quality"
Sprocket Wheels — Bearing Surfaces hardened — Specially treated to resist wear.
All kinds of wearing parts to resist abrasion.
Unequalled for severe duty and long life.
Write for Fuller Quality Products Catalog No. 50-A
Lehigh Car, Wheel and Axle Works
Catasauqua, Pennsylvania

THE BURNER IS THE PRODUCER
Are you willing that he should produce by guesswork?
Combine forces with him. Give him a Price Pyrometer installation and note that his enthusiasm and his wisdom grows.
He takes on fresh courage for his work because he **knows** what he is doing.
The Price Electric Co.
12367 Euclid Avenue
Cleveland, Ohio


POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS

Send for Catalogue No. 65-B
Murray Iron Works Co. Incorporated Feb. 1, 1870 **BURLINGTON, IOWA**

"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
Offices: Steubenville, Ohio
Mills: Newark, Ohio
BUCKEYE MEANS BEST — BEST MEANS BUCKEYE
All Sections from 12 lb. to 40 lb. per yard
Write or wire us, when in need.
No order too large to handle promptly or too small to secure immediate attention.



Pyrometer Advice

The advantage and necessity of a pyrometer in brick manufacturing does not have to be proven. It is established. BUT—The advantage and necessity of THE pyrometer DOES have to be proven. We are prepared. Let us send you a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa. 9

STRENGTH UNIFORMITY DURABILITY REG. U.S. PAT. OFF.

Webb Wire Wears Well

Our
"Red Label" Piano Wire
is made especially for Brick and Tile Cutting

All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

Ask for Sample and Prices

THE WEBB WIRE WORKS
New Brunswick, N. J.



Davenport Locomotive Works,
Davenport, Iowa

PERFORATED METAL SCREENS

As required for BRICK MAKERS USES

PERFORATED SHEET METALS OF EVERY DESCRIPTION — HENDRICK MANUFACTURING CO. CARBONDALE, PENNA.

Manufactured by

New York Office
Room 1023 Cortlandt Building

HENDRICK MFG. CO.
CARBONDALE, PA.



THERE IS BEING UNFOLDED to the brick manufactures of the country an unusual opportunity for pushing the sale of brick of all kinds, especially paving-brick, this summer and fall.

Portland cement, by August 1, especially in the vicinity of "zones" 1 and 2, more commonly known as the Lehigh and the Hudson valley manufacturing districts, will be short on supply. The first signs of this condition are apparent, and the most reliable authorities in the business verify the statement. At the time this review was written there were only 700,000 barrels of Portland cement in both these districts over and above the total quantity on reserve on October 1 of last year, the extreme low point in reserve stocks in either section. This represented only a ten day supply over the ordinary demand for that section of the country.

At that time there were 160 kilns under fire in both sections. The Alpha, Lehigh, Atlas, Alsens, Knickerbocker, Lawrence and other first degree plants were included in this figure. On the first of January there were only sixty kilns in service. February 1 there were eighty, March 1 there were 115 and on April 1 there were 148.

More kilns were scheduled to be put in service in the last week in April, but even with eighty-five per cent of the kiln capacity of these two sections in service the demand will be such as to warrant the manufacture of 100,000,000 barrels of this material this year, or 12,000,000 more than was produced last year.

If demand be equal to a 100,000,000 annual production for 1915 at this time, when the manufacturers are depending entirely upon building and municipal improvement work, it seems logical to suppose that when the railroads and state road building requirements are made known for bids the cement plants of the country will be seriously handicapped to supply this commodity at the prices now prevailing, which (for the East) is approximately sixty cents, mill.

The logical inference, in the light of this situation, is that prices must advance if supply and demand alone control the situation. It does not seem at all likely that the captains of the cement industry will be inclined to manipulate prices in order to keep them at the present low mill prices in the light of recent Federal action in cases of this kind.

Wherefore, the brick manufacturers will find—along about August—that road contractors will be up against the proposition of cement at eighty cents, and possibly near a dollar a barrel, mill.

This will make cement rather expensive to buy in quan-

tity and paving-brick will come in for a liberal share of consideration from specifying engineers.

The writer has had access to information regarding the cement manufacturing situation that permits of no doubt but that the conditions surrounding the supply of cement are approaching the abnormal. There is a considerable capacity yet to be employed in both the Lehigh and Hudson valleys, but there is also a great deal of construction work of a general nature still to come out.

The last report of the national building movement showed that plan filings were only 2.2 per cent lower than normal and the great report companies show that even at this time more than 45 per cent of plan filings are going ahead.

Add to this the 66 per cent of last year's new building plan filings that did not go ahead because of the stress of national finance and there is at hand an actual building construction movement under way that is 11 per cent above normal at the close of April.

In New York City, where money has been especially tight for more than nine months, it is now possible for business houses to negotiate loans without having to pay exorbitant commissions. Not very long ago, around the first of February, commissions for loans on building operations ran as high as fifteen and twenty per cent, and loans were not easy to get at that figure. Great lending institutions made engagements very sparingly. Today the highest commissions for loan accommodations run not more than eight per cent, and in many cases, in fact, the majority, report a commission for accommodation at something like three per cent.

In consequence, there is a tremendous building movement in progress in the Bronx, a section of the city that is taking a large part of the east side labor into the new industrial terminal districts being erected in the Hunts Point section. In that borough (the Bronx) where loans were negotiated at terrific pressure when the money market was particularly tight, there are hardly three square blocks that are not the scene of a building operation of some sort. Savings bank surpluses are being again built up, gold continues to pour into this country from Ottawa and the railroads are intimating that they are about ready to come into the market for material for improvements.

The outcropping of labor strife is a symbol of improving times, also the fact that many of these, like the Chicago carpenters' strike, are being arbitrated, indicates that the officials are in a conciliatory mood.

The country as a whole presents the picture of an awakening giant. The sinews of industry are beginning to tighten. The tendons of commerce are strengthening, and the pulse of finance is beginning to quicken. The respiration of an eager business world has taken on speed as one after another the glowing promises and opportunities of a new era of expansion color the sky, already new-lit with the rising sun of Nation-wide Prosperity.

Washington Offers Good Field for Drain Tile

A letter, recently received from the Star Brick and Tile Plant, at Bay View, Wash., states that the prospects for drain tile are very good, the first kiln of tile having been burned off and sold without delay. The farmers drove to the yard and took away what they wanted, without haggling as to price. Ground is being broken for a new 28 foot round, down-draft kiln, it being believed that the district will take all of the tile that can be made, even with the increased capacity.

"Clinton" Brick and Mortar Colors

Insist on seeing this label

Unusually strong in pigment. Positively warranted not to wash out, "streak," or fade. Recognized everywhere as the standard of Brick and Mortar Colors.

Full particulars and prices gladly furnished.

Insist on the genuine "Clinton" colors made only by

Clinton Metallic Paint Co. Clinton, N. Y.
P. O. BOX 38

CARS

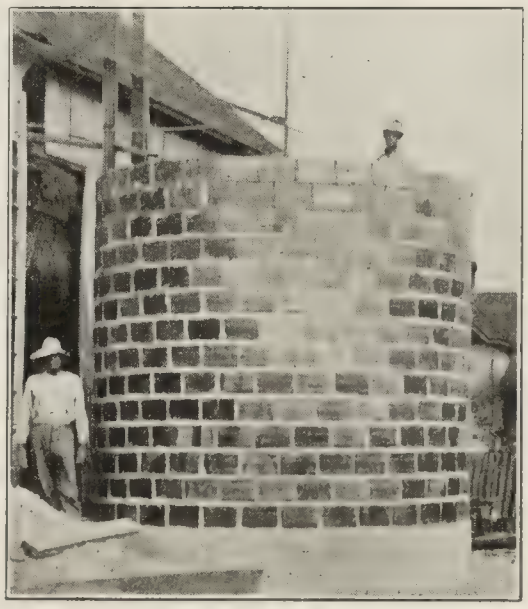
Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS

Do you make Silo Blocks?



Note the Vertical Rod in Door Frame.

Why Not?

There's lots of money in it if you make the right kind.

DURO
Everlasting Clay Block Silos

will increase your income.

Construction is simple, yet it makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.

MOWRYSTOWN BRICK & TILE CO.
MOWRYSTOWN, OHIO

WE CAN MAKE
PROMPT SHIPMENTS
OF
DU PONT
EXPLOSIVES
AND BLASTING SUPPLIES

DESPITE the present demands for explosives, our facilities for securing materials, the operation of extensive powder plants equipped with special machinery and expert employes, and ample storage and shipping arrangements enable us to promptly and satisfactorily fill all orders.

Over a century's experience in the explosive field gives us a practical knowledge of its requirements. The superiority of our products is recognized by world-wide demands.

Specify DU PONT when purchasing explosives and blasting supplies, and be assured of prompt shipments, uniform quality and maximum efficiency.

DU PONT POWDER COMPANY
Established 1802 Wilmington, Del.

The "Invincible"
Brick Barrow

Made with babbitted cast iron bearings, seasoned white oak, bent wood runners, cast iron shoes and wrought iron braces throughout.

It's a Marvel



Write for Price

¶ This barrow has become so popular among brick makers that we have hardly been able to supply the demand—but we have made up a good stock for quick shipment.

¶ We also make several other styles—get our catalog and prices before you buy any others.

The Toronto Foundry & Machine Co.
Toronto, Ohio

We make the "MEANS" Pans, Presses and Pugmills and a complete line of supplies for every make of brick machine.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

The Clay Products Company of America, Fairhope, Ala., which has just been organized, will develop three hundred acres of clay land near Clay City, Ala, and will manufacture brick, tile, hollow blocks, terra cotta, fire brick and roofing tile.

ALBERTA

The Ferguson Segment Block Company, Calgary, Alberta, has been incorporated with a capital stock of $50,000, to manufacture and sell segment sewer blocks, brick, terra cotta, etc. Ralph S. Rhoads, George W. Fowler and Augustus H. Stowell are interested parties.

CALIFORNIA

The city of San Jose, Cal., is in the market for a quantity of eight-inch vitrified sewer pipe.

Schuyler and Edwards of Monterey, Cal., has been awarded a contract for the furnishing and laying of sewer pipe in that city amounting to $2,085.

The Fresno Brick Company, Pittsburgh, Cal., has been incorporated with a capital stock of $200,000, by Fred Dodd, B. G. McDougall, W. G. Uridge and F. Rehourn, of Fresno, and C. P. Lindgren, of San Francisco, Cal.

The Stockton Fire and Enamel Brick Company of Stockton, Cal., is now running its plant to capacity. This company recently completed deliveries of brick for the garbage disposal plant at the Panama-Pacific Exposition grounds.

L. F. Riley, of Oroville, Cal., has received a number of sample brick made from a new bed of clay, a quantity of which had been sent away for a test. A favorable report was returned and Mr. Riley states that he will now proceed with his plans for a brickmaking plant near Oroville.

Gladding, McBean and Company of San Francisco report considerable activity in the demand for brick and other clay products for school construction in country districts. Several contracts for work in northern California have recently been let, and there is other similar work in prospect.

The California Railroad Commission has dismissed the complaint filed by various clay and pottery companies of San Francisco and vicinity against the Southern Pacific Railroad Company. The complaint charged unjust, discriminatory and unreasonable rates on clay and clay products. Although the complaint has been dismissed, the Commission has ordered the railroad company to prepare a new tariff embracing all its rates on clay and clay products in such shape that it will be possible for shippers to determine for themselves the correct charges and thus check up quotations given them.

Through E. M. Prescott, manager of the Fresno Brick and Tile Company of Fresno, Cal., the Los Angeles Pressed Brick Company of Los Angeles, Santa Monica and Richmond, Cal., has secured one of the largest clay

products contracts ever let in California. The contract calls for approximately one hundred carloads of twelve-inch red rough-textured brick, ten carloads of paving brick, ten carloads of roofing tile and between five and ten carloads of pressed-brick, fire-brick, fireproofing and quarry tile. The rough-textured brick will be delivered from the Santa Monica plant, the paving brick from the Richmond plant and the other products from the Los Angeles plant.

CONNECTICUT

The first of the Berlin (Conn.) brick plants to begin operations for the season, is that of J. H. Cooney. This plant commenced making brick about the middle of April.

James P. Martin of Pennsylvania recently purchased the Farmington(Conn.) plant of the New England Brick Company.

Brower & Best, brick manufacturers, of Thompsonville, Conn., have received an order for 15,000,000 brick, to be used in construction work in Springfield, Conn.

Berlin, Conn., brickmakers report a brisk business. Every day sees several carloads of the finished product shipped away. Clay pits are being pumped out and preparations made for the spring manufacturing season. At some of the yards pumps are working night and day.

Additional thefts of belting from brickyards and similar plants are being reported to the police of New Britain, Conn, and vicinity almost daily. Officials of the Styles & Reynolds Brick Company of Berlin lost a main belt measuring 20 feet and 12 inches wide one night recently. The police have no clue.

DISTRICT OF COLUMBIA

Business has been good with the Washington (D. C.) Silica Brick Company since February, according to one of the officials of the company. This company, which now has a capacity of some 40,000 brick a day, has been one of the few local brick companies to work all winter.

The Washington (D. C.) office of the Hydraulic-Press Brick Company reports the obtaining of the contract for the face-brick on the First Presbyterian Church, being erected at Durham, N. C. Milburn, Heister and Company of Washington, are the architects, and J. A. Jones is the contractor.

Because of the fact that glazed brick brought the bids over the cost allowed for the three municipal bathing pools, located at the Rosedale, Georgetown and Howard playgrounds, in Washington, D. C., the specifications are to be redrawn, and it is probable that the pools will be lined with cement. The bids were several thousands of dollars in excess of the Congressional appropriation for the work.

Partly because of the petition made by a committee of the Builders' & Manufacturers' Exchange to the District Commissioners, several of the municipal contracts have been awarded. The committee asked that the contracts for certain work be signed, so that the unemployed might get jobs. The District Commissioners have just given out the contracts for the Park View School and No. 3 Police Precinct. Both call for brick.

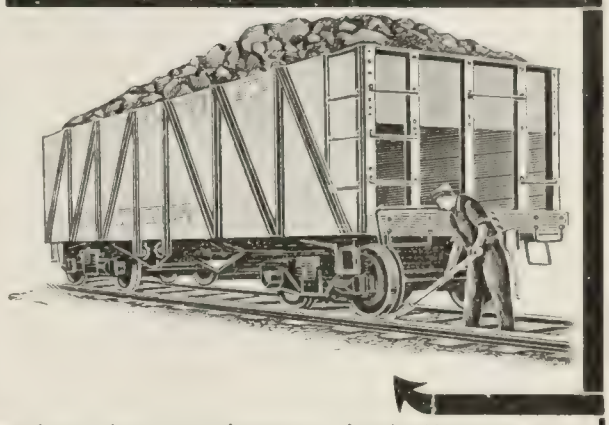
Government officials here have been informed that an investigation to determine the load-carrying properties of fire-brick when built up in the form of small piers and subjected to a load of 40 pounds per square inch at different temperatures, is being carried on for the American Gas Institute and the American Refractories' Association.

How Much Does It Cost You To Move Your Cars?

More, perhaps, than you can calculate because no one has ever stopped to figure it out for you. This is one of the seemingly little items of expense that cut down your profits and make you wonder why you didn't make more money.

But you can change all this if you'll spend just $4.00.

The IDEAL Car Mover



and **one man** will move a loaded car with ease and save you many times its cost during the year.

Send for one on trial. Send it back if you don't want it.

We specialize in clay plant equipment, including elevators, screens, cars, track, switches, etc.

Write today for our Catalog

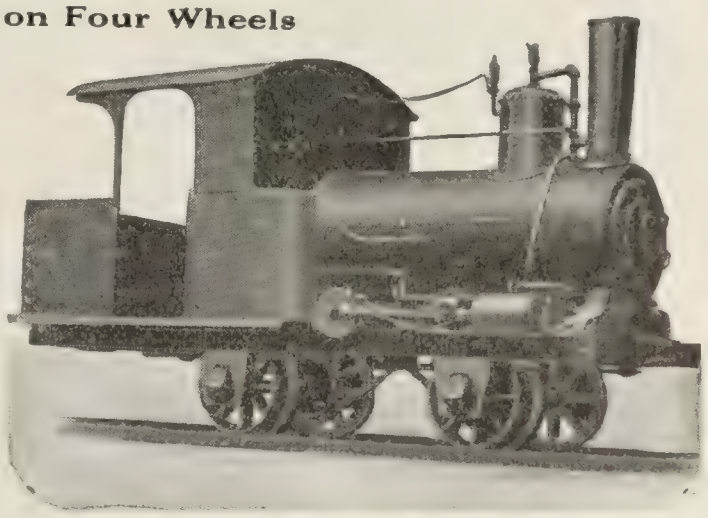
H. B. SACKETT SCREEN & CHUTE CO.

1681 Elston Ave., Chicago

Branch Warehouse:
191 Medford Street, Charlestown, Mass.

SACKETT 1685 ELSTON AVE CHICAGO

"Getting There" on Four Wheels



THE DEWEY 5-Ton Locomotive

Costs $1200 About as Much as a Good Team of Mules

It Never Balks on Heavy Loads or Grades

It pulls a full load under every condition and on any track. Does more and costs less than any type of Standard Locomotive of same size and power.

"Let the Dewey Do Your Work"

Write

for descriptive literature and "reasons why" you will save money by having the Dewey in your plant.

DEWEY BROS.

GOLDSBORO, N. C.

"NUGGET"

Bearing Metal

FITS YOUR LADLES

Guaranteed
MOST *Economical and Efficient*

For

Brick and Clay Working Machinery

Because

Exhaustive research and practical tests have proven that its hardness assures great wear resistance—its high compressive strength enables it to withstand heavy duty. Why don't you let us prove it?

Price, 15 cents per pound, delivered.

Manufactured Solely by

The Cleveland Alloys Co.

Bearing Metal Experts

CLEVELAND OHIO

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA.– CHICAGO, ILL.

Why Most Brick Streets Use Lehigh Cement

Because it is not only **high** in **strength** but **dependably uniform.**

A perfect vitrified paving block of **your manufacture** used with a perfect cement filler of **Lehigh** Cement make a permanent street for the city for the city and a permanent highway for the country.

These are only a few reasons why more brick streets use **Lehigh** Cement than all others combined.

You Cannot Afford to Take Any Risk

Lehigh Cement is the perfect cement. Specify it always. It protects you. Set the proportions for the mixture. Adhere to them. Then your job will be uniform throughout.

LEHIGH CEMENT

This is extending the work done a few years ago, when the load-carrying properties of single brick were determined.

The United States Board of General Appraisers has just handed down an opinion regarding duty on brick, in which they say, in part: "Scouring brick, classified as manufactures of pumice stone under paragraph 75, tariff act of 1913, were claimed dutiable as articles of earthy or mineral substances. It was found the brick in question are composed of clay and flint, ground and baked in a kiln, and that no pumice enters into their manufacture. Protests sustained on the authority of Waddell v. United States." The protest was made by J. H. Rhodes & Company, of New York City.

A directory of international, national, state, territorial and local commercial organizations in the United States is being compiled by the Department of Commerce, at Washington, D. C. The directory will contain detailed information as to the number of members, the annual income, date of annual meeting and primary purpose of each organization, and, by the use of a number of symbols, will show the principal activities of the leading associations. It is the desire of the department to have the directory ready for distribution early in June.

ILLINOIS

L. H. Obershelp, New Bedford, Ill., is preparing to resume operations at his brick and tile plant, working to capacity.

The Streator Clay Manufacturing Company, Streator, Ill., has increased its capital stock from $200,000 to $500,000.

The Dallas City (Ill.) Brick and Tile Works is installing a new boiler of much larger capacity than the old one, to improve its method and speed in handling the output of the plant.

Among the veteran brick salesmen of the country, none is better known than "Mike" Dering, of Peoria, Ill. News comes that he has enlarged his display room in the Woolner Building, and has an exhibit that rivals any in the state, outside of Chicago.

The Stephen Ellis brick plant at Canton, Ill., has been purchased by Heckard and Sons, brick manufacturers of that town. The Ellis plant has not been in operation for some time, but the new owners are preparing to make an inspection of the equipment with a view of ascertaining just what is needed in the way of repairs and improvements for the manufacture of common brick and hollow building tile. Heckard and Sons have a very good clay-working business of their own and will combine the present plant and the new one, both plants being conducted under the same firm name.

INDIANA

H. C. Kleymeyer, general manager of the Standard Brick Manufacturing Company, Evansville, Ind., has purchased the plant and property of the Evansville Brick and Tile Company, of that city.

The Vincennes Shale Brick Company, Vincennes, Ind., has been incorporated with a capital stock of $80,000 by Henry B. Davis, of St. Louis, Mo.; John L. Kleymeyer, Vincennes, Ind., and W. M. Willmore. The main office of the company will be in Vincennes, while the plant will be established at Loogootee, Ind.

James E. Ford has been elected manager of the Fort Wayne Brick Company, Fort Wayne, Ind., to succeed Edward C. Miller. Mr. Ford's election took place at a

meeting of the directors and officers of the company recently at the Commercial Club. He has had considerable experience in the brickmaking industry and is a valuable addition to the company's corps of officers.

Following on the heels of the amendment to the Indiana law, which now permits the use of brick in paving streets and roads, comes the petitioning the board of public works of the City of Vincennes, Ind., by property owners that brick be used as the paving material for three streets in that town. Fifth, Sixth and Shelby are the streets on which the property owners want brick used. The board is analyzing the petitions before announcing its decision.

IOWA

The Sioux City Brick and Tile Company, Sioux City, Ia., has been awarded the contract for 750,000 common brick for the new Manson school building at Manson, Ia.

The Iowa state board of control made a visit recently to the Flynn farm just west of Des Moines with a view of looking over the ground prior to the establishment of a brick and tile plant for the employment of convicts. The clay deposit at this point is to be tested and its worth ascertained.

The Oskaloosa Paving Brick Company, Oskaloosa, Ia., will sell its entire plant to a new company which will finance the installation of new machinery. Stockholders in the new company are H. H. Sheriff, Harry H. Phinney, A. P. Spencer, John H. Blakeslee, Dr. O. B. Jerrel and Earl F. Bridges.

KENTUCKY

Brick manufacturers of Louisville report fairly satisfactory volumes of business at this time. The Louisville Fire Brick Company is running its two plants, the one at Louisville and that at Grahn, Carter county, on a half time basis and does not find that business justifies more extended operations.

From Barbourville, Ky., comes the report that the Barbourville Brick & Tile Company has resumed full time and full capacity operations after lying idle for several months. Orders ahead, it is said, insure that the plant, which employes fifty men, will be in operation for the remainder of the year.

E. P. Teague, secretary-treasurer and sales manager of the Union Cement and Lime Company, Louisville, reports that the company has completed its show room at the Main street office and has put in a series of brick panels, making a display that is attracting a great deal of attention. Business is coming along in good shape, Mr. Teague states, although, as a rule, the orders are for small quantities.

Paving work is under way in Louisville on a large scale and it is being noted with much interest by the manufacturers and dealers in paving brick that their product is not being neglected. It has been found that where the traffic is varied and heavy, and wear a chief consideration, that a good brick paving is hard to excel. Brick streets and alleys make up a large proportion of the city's paving work this year.

The brick dealers in Louisville are handling a volume of business which is considered satisfactory, according to the reports from several of the dealers. Considerable interest is being manifested in the plans for the new building of the Southern Methodist Board of Church Extension, which is being erected on Fourth street near St. Catherine. This will be a $75,000 structure, built from plans prepared by Capt. B. B. Davis. There has been

More and More

Brick Manufacturers

Are using Nuttall Cut Gears because they eliminate

Rejections

Cut gears give maximum efficiency and do away with vibrations.

Address

Nuttall - - Pittsburgh



Flower Pots—

A Profitable Bi-Product

No matter what the nature of your clayworking plant, it is no doubt possible for you to add Flower Pot manufacturing with very little additional outlay.

Often you wish you had some way to keep Jim Smith or Jack Jones busy all the time, don't you? Well, here's the solution: put in a

Baird

Flower Pot Machine

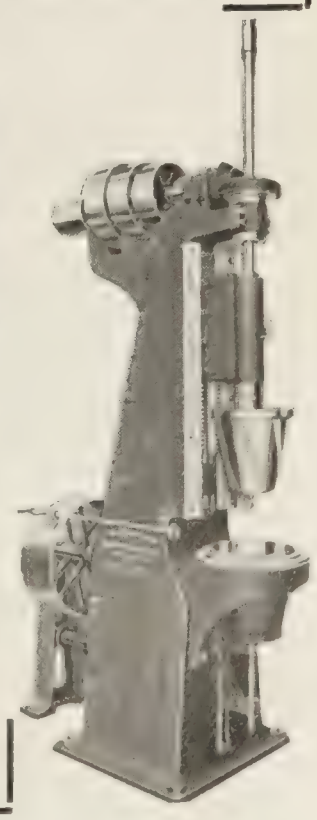
Easy to operate, absolutely accurate. Makes any regular size pot desired.

Send us a sample of your clay and let us show you what our machine will do.

Baird Machine & Mfg. Co.

54-56 Jefferson Ave.

Detroit, Mich.





Type B—$^3/_4$ cu. yd. Erie Shovel.

The object:

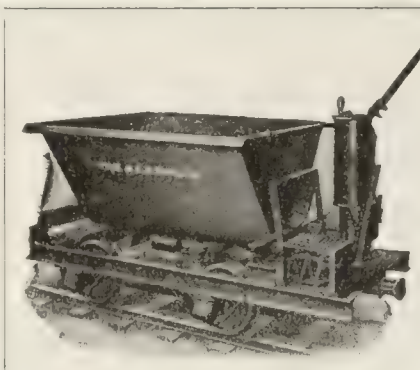
To Build a Better Shovel

We know just as well as you know that it would be to no good purpose to put another shovel on the market and have it merely "just as good." To justify its existence it had to be better.

And the ERIE Shovel is better—in many ways.

All we want to do is to get you to say: "Well, I am going to investigate the ERIE." The opportunity to show you how and why the Erie is the "better" shovel you have been looking for is all we ask. Catalog A gives the facts and figures—where shall we send your copy?

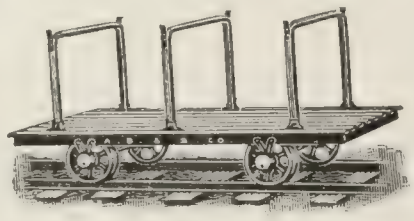
BALL ENGINE CO., - Erie, Pa.



No. 217-E. Side Dump Car Equipped with Motor

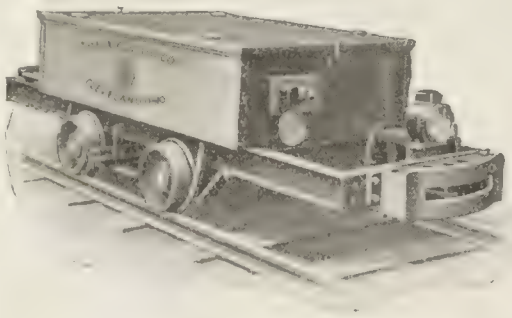
REDUCEYOUR HANDLING COSTS

By the Purchase of Efficient Equipment



No. 126 Double Deck Dryer Car

ATLAS High Efficiency Cars and Electric Locomotives



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.

Dept. I

1287 Marquette Road, Cleveland, Ohio

considerable uncertainty regarding the facing material to be used on this structure. Stone or a combination of stone and brick seem to be in favor.

The Tyler Building Supply Company has been finding the season a good one and has closed a number of large contracts. One of the jobs is that for the Bernheim building, for which the Tyler Company is furnishing polychromatic terra cotta for trimming and face-brick for the panels. Operations on this building were going forward rapidly during the last week in April, the contractor having begun to lay the terra cotta in place. Isaac Tyler, also of the company, has just returned from a trip through the state where he secured some good orders. Most of the business of this company, as is the case with other dealers, is in small residence jobs.

With the warm open weather which has come to stay, there are signs of greater activity in brickmaking and burned clay circles in Louisville and vicinity. Both manufacturers and retailers find business fairly good for building materials, although the jobs are coming in small lots, requiring a large number to keep the volume up to reasonable proportions. There are any number of small building operations under way this year in Louisville and the territory immediately around the city. The large operations are few or are tied up with specifications and contracts closed. Rumors of extensive building projects are heard now and then, but it is beginning to appear that execution of them will be delayed for some months.

The owners and architects of the new East Broadway Moving Picture Theater of the Broadway Amusement Company, Louisville, Ky., are receiving many compliments over the successful treatment of the lobby of that building. It is finished in Rookwood faience tile made according to the specifications of the architects, Joseph and Joseph, and cost, set in place, $2 a square foot. The lobby itself is thirty by fifteen feet, the tile work forming a wainscoting seven feet in height. An especially effective piece of this work is seen in the box office, which occupies a portion of the lobby, this being constructed of the Rookwood tile and ornamental wrought iron. The floor of the lobby is finished in vitreous tile and the whole is exceedingly effective. The same architects are specifying a considerable amount of tile and terra cotta work in the new Phoenix Theater for which the contracts have been let and which they are building for the Phoenix Amusement Company of Lexington, Ky., where the theater will be erected. This will be a large theater and an unusually handsome facade and lobby are provided.

An interesting development is noted at the plant of the Hillenbrand Brick Manufacturing Company, Louisville, Ky. The company, according to Oscar Hillenbrand, is making a more careful selection of its face-brick, going over the stock as it comes from the kilns with greater thoroughness than usual, and getting out a much larger proportion of the high grade and better-priced brick. The Hillenbrand Company has always carried a stock of approximately 100,000 face-brick, and has been taking from fifteen to twenty thousand of these brick from the run of the kilns during the average month. Now, however, with the same volume of sales, the brick are being selected at the rate of 90,000 a month. Wherever it is possible to do so, deliveries of face-brick are made direct from the kiln, being sorted as they are loaded, thus eliminating one handling. This is one of the ways the Hillenbrand company has been meeting the changing conditions in the Louisville building field represented

by the increase in the number of small building projects and the decrease in the number of large projects, and it is found that the returns from this method are satisfactory. Among the jobs to which the company is delivering is the Kilgore and Stiltz carriage shop building on First street, the Railey apartments on Cherokee Drive, an apartment house at First and Broadway, a number of small jobs in St. James Court.

MAINE

The Bangor Brick Company of Bangor, Me., is planning the erection of a three story brick building in the business district of that city on Park street.

The Brooks Brick Company, Brewer, Me., has received orders for about two million brick which are to be used in Bangor and vicinity, where a large number of brick buildings will be erected this year. The prospects for a busy season for this company are very good.

MARYLAND

The brick plant of Mayer Brothers, Frostburg, Md., is soon to be rebuilt, according to the announcement of the company, made recently. The plant, which was destroyed by fire last August, will be replaced by a larger one, enabling the firm to manufacture building and paving brick, hollow tile and flue lining.

MASSACHUSETTS

More than forty acres of land at East Brookfield, Mass., owned by the New England Brick Company, were burned over by forest fires recently, but the damage was not great.

The Massachusetts Clay Goods Manufacturing Company has been incorporated with a capital stock of $100,000 by A. I. Stoneman, Boston; A. G. Gould, Malden; and H. J. H. Sears, Danvers, Mass.

A forest fire which burned over a large area at Northampton, Mass., on April 20 and 21, destroyed a number of cords of cut wood belonging to the Northampton Brick Company, and damaged the property of the company.

MICHIGAN

George H. Clippert, third vice-president of the N. B. M. A., was able to leave the hospital on April 20 after an operation which had confined him there for several weeks.

J. S. Haggerty, Detroit brick manufacturer, is somewhat pessimistic, so far as the outlook for 1915 is concerned. He says the demand is fair and will continue to be, but that he does not see how there can be any big business boom, such as Detroit has had in other years.

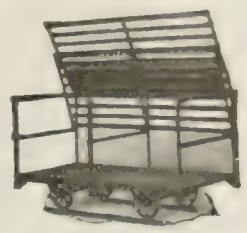
The Detroit Builders' and Traders' Exchange is organizing a baseball league, comprising one team from each branch of the association. The brick men are to be represented in the league, and suits have already been ordered.

The Ajax Brick Company, of Detroit, Mich., reports a very satisfactory trade. While a day shift only is being employed at present it is very possible that a night shift will be added early in May. This company also reports that there is a tendency towards price increase.

Charles H. Bryan, of the Mercier-Bryan-Larkins Brick Company, recently visited Flint, Mich., on business, and while there conferred with the Flint builders about their new organization. Mr. Bryan was active in starting the Flint body, and is taking a paternal interest in its success and growth.

The Baker Clay Company, of Grand Ledge, Mich., ex-

LAKEWOOD EQUIPMENT



No. 176

The kind that makes you satisfied and keeps you satisfied, because it has strength to work, day or night. It never strikes.



Turntable No. 201

The "LAKEWOOD" Line is Built to Last

Every device is designed to do its work **better.** It is planned before it is built and it is built of only the best material by the best mechanics obtainable.

THE LAKEWOOD ENGINEERING CO.

Formerly Ohio Ceramic Eng. Co.

CLEVELAND OHIO

Ask for Booklet No. 11



Electric Transfer

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

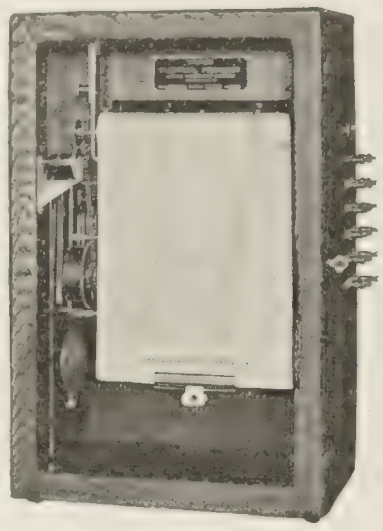
100 William Street, New York

It Makes No Difference

Whether

You Have Three Kilns or Twenty

There is a



TWINKO

THWING INSTRUMENT COMPANY

Multiple-Record PYROMETER

equipment which will care for your needs at the minimum of expense and the maximum of results.

Assume, for illustration, that you have twenty kilns, but only six are at critical stages of firing at one time. You can secure automatic, continuous records of those six, on a recorder as shown in cut, and by using a polarity switchboard, be in a position to connect to any of the twenty kilns that you may select.

Write for Bulletin No. 7

Thwing Instrument Company

437 N. Fifth Street, Philadelphia, Pa.

PHILLIPS & McLAREN CO.

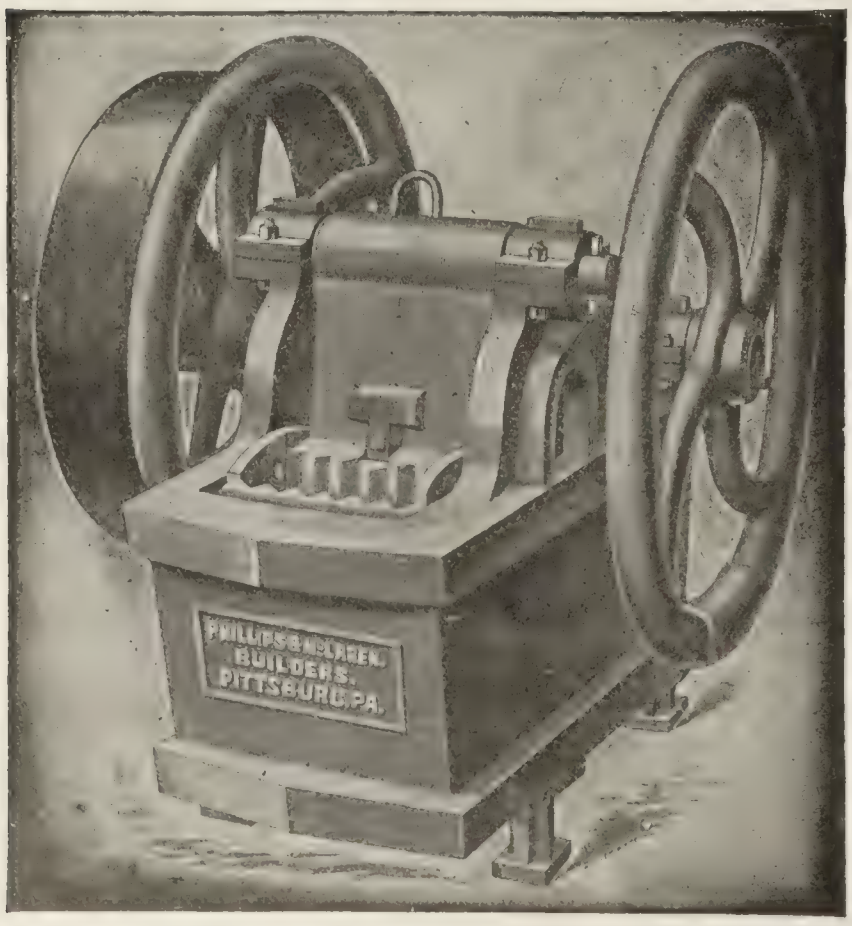
PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.



pects to begin factory operations during the early part of May. One of the features of the factory is the protection offered employes by the shielding of pulleys, belts, and other danger points. An office has already been erected on the grounds and the downtown office has been moved to the Summers block on South Bridge street.

MINNESOTA

The bickyard of E. Kaul and Sons, Faribault, Minn., it is reported, will soon be in full operation to supply the local demand for its product. Experienced workers have been secured from Mankato and have moved with their families to Faribault.

An order for two million brick has been awarded to the Range Lime, Brick and Cement Company, Pengilly, Minn., to be used in the construction of a new armory building in Duluth. The company has at present about a million brick in its sheds. Since this is but half of the necessary amount to fill the order, the remaining million of brick will keep the plant busy for some time to come.

MISSOURI

The Mandle Clay Company of St. Louis, Mo., is busy at its pits in Henry county, Tenn., from which it is shipping china clay.

G. W. Thurston, secretary of the Western Paving Brick Manufacturers' Association, Kansas City, Mo., left recently for a trip into Louisiana and Arkansas on business. Mr. Thurston will be gone for several weeks. The Western Paving Brick Manufacturers' Association held its regular monthly meeting at Kansas City, Mo., April 17.

F. B. Meyenberg, of Chicago, Ill., will soon reopen the plant of the old Alphons Custodis Chimney Construction Company, two miles southeast of Pittsburgh, Mo., under the name of the Meyenberg Terra Cotta and Brick Company, as soon as the necessary repairs have been completed. The old plant, where brick was manufactured for chimney construction, has been closed for seven years.

NEW JERSEY

Mayor Marvlag, of Elizabeth, N. J., recently stopped a street paving job in that city, claiming that the contractors were using brick that was inferior to that specified in the contracts.

The past month has seen a renewed activity among the terra cotta plants of New Jersey. Building activities are progressing so satisfactorily as to cause a material increase in the number of plants in operation and in the number of men that are employed. The plants of the Atlantic Terra Cotta Company at Perth Amboy and Tottenville, N. J., the Standard plant of the National Fireproofing Company and also the Raritan plant of the same company at Keasbeys, have come in for a share of the increased business and are gradually enlarging their force of men and increasing the number of working hours.

NEW YORK

The Glens Falls Brick Company, Glens Falls, N. Y., has announced through one of its officials that the prospects for a good business during the coming season are very bright. The company is about to resume operations at its plant, which has been closed down during the winter.

OHIO

The Toledo Vitrified Brick Company, Toledo, Ohio, has been incorporated with a capital stock of $50,000 by William W. Pioch, William Grachel and C. W. Brannan.

The Shaw Mantel and Tile Company, Zanesville, Ohio, has

added two additional tile setters to its working force to take care of the heavy spring business in mantel and tile work.

The Cambria Brick and Clay Company of Black Fork, Ohio, has undergone a reorganization, and in addition to the manufacture of its regular line of brick, the company has installed new machinery for the manufacture of sewer-pipe.

The Denison Tile Works Company, of Delaware, Ohio, which turns out a full line of hollow building tile and similar goods, recently received a handsome order, being that for furnishing interlocking tile, of its own special design, for use in the construction of the new Deshler Hotel in Columbus, Ohio.

The lobby, general offices, corridors and walls of the Western & Southern Life Insurance Company's building at Fourth and Broadway, Cincinnati, Ohio, which is now rapidly advancing in construction, will be covered with Rookwood pottery, in designs especially prepared for this building. The contract for the work was recently awarded to the T. H. Winston Company, a local concern specializing in tile work, at a figure in the neighborhood of $20,000. The clay decorations will be the handsomest in the city.

According to several of the leading handlers of high-grade face-brick in Cincinnati, Ohio, the building situation just now, locally, is hardly as good as could be asked, although it is much more satisfactory than at the corresponding period of last year. It seems that while the season is to be characterized by the absence of a group of large jobs, the Courthouse and the Val Duttenhoefer building being about all in sight, there is a fair range of residence work, which will eventually bulk up pretty well. Of course this means that active sales work will show relatively smaller results than when the unit jobs average larger.

A strike of members of the national brick-workers' union enlivened an otherwise dull period at Sandusky, Ohio, recently, the plant of the Hinde Brick & Tile Company being the one involved. The plant was closed down temporarily, for several perfectly good reasons entirely unconnected with labor matters, and it seems that some of the men got the idea that they were being discriminated against because of membership in the union. The president of the national union came to Sandusky to confer with local union leaders and officers of the company about the trouble, and inasmuch as there was no real difficulty between the men and the company, the matter was soon settled.

In spite of the brave opening of the 1915 building season, with prospects of unusual activity by reason of the prosperity of Akron's big rubber, pottery and other industries, several of the brick concerns in that thriving manufacturing city have found time to give substantial assistance to the usual "clean-up" movement. The city found itself without funds to finance a real clean-up, which, of course, costs money; and the city's business men promptly came to the rescue, largely with the donation of facilities in the shape of trucks and teams to take care of the accumulations of rubbish resulting from the efforts of the clean-up cohorts. The Akron Brick & Tile Company, the Robinson Clay Products Company and the Cooper Brick Company was among these, and by this assistance the work was carried on in an expeditious and thorough manner.

A real blow to the paving-brick industry in Ohio, and to those plants outside of the state which have furnished brick for use on the highways of Ohio was dealt re-

Ohio Kiln Company

The Improved Hook Patent Up and Down Draft Kiln

Burns Ware Evenly

30 ft. kilns of brick burned in 82 hrs. from start to finish.
30 ft. kilns of drain tile burned in 55 hrs. from start to finish.

No Damaged Ware in Watersmoking. Heat Applied to Bottom and Top at the Same Time

Saves From 25 to 50% Time and Fuel

Mr. C. Hook, the inventor, being associated with the OHIO KILN CO., is proof of the superiority of THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM. No plans for building or changing leave the office without Mr. Hook's stamp of approval; you are also assured of his personal co-operation, as well as benefit of his 26 years' practical experience. Knowledge gained by the use of a common down-draft system in the last few years, prompted the invention of the UP-AND-DOWN DRAFT SYSTEM, which produces GOOD, HARD, WELL-BURNED WARE in all parts of the kiln, and overcomes all difficulties heretofore experienced.

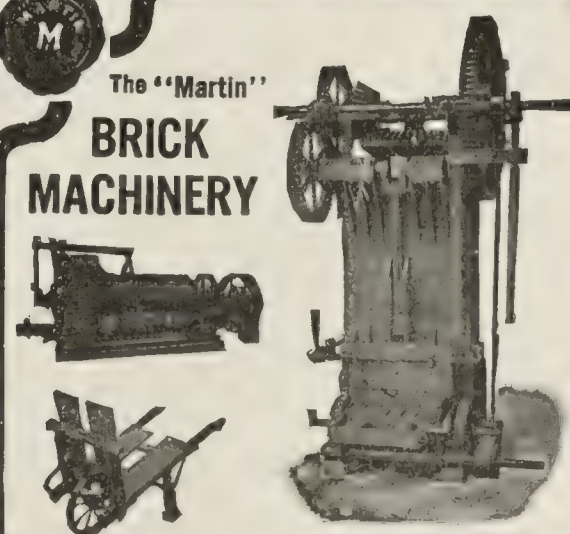
MR. C. B. YOUNG, who was formerly state chemist and is now general manager of THE FARMERS' FERTILIZER CO., of COLUMBUS, O., in order to meet the increasing demand of farmers for drain tile and brick, is building an up-to-date tile and brick plant. After careful consideration and thorough investigation is using THE IMPROVED HOOK PATENT UP-AND-DOWN DRAFT SYSTEM—"HOOK'S MASTERPIECE." Do not be deceived, when ordering plans, be sure you have Mr. Hook.s indorsement. Further information will be furnished upon request.

Ohio Kiln Company

Vigo, Ohio

C. Hook, *Patentee* **J. E. Wiltshire, *Sales Mgr.***

The "Martin" **BRICK MACHINERY**



Modern **YARD SUPPLIES**







Soft-Mud or Stiff-Mud Processes

Get Our Plans

Dry or Wet Grinding Pans

Barrows and Trucks

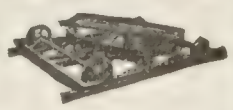
Disintegrators

Clay Cars--Dryer Cars

Hoisting Drums

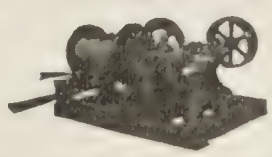






The Henry Martin Brick Machine Mfg. Co.

GET MARTIN PRICE LIST



LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG

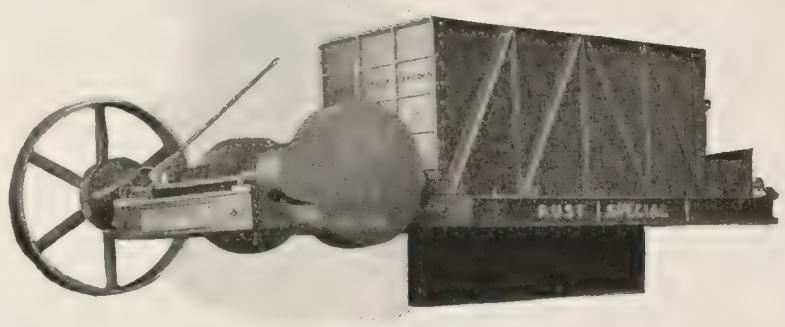
How much of your loss is due to off-shade burns?

Do you know what makes them off-shade?

Are you sure it is not the clay?

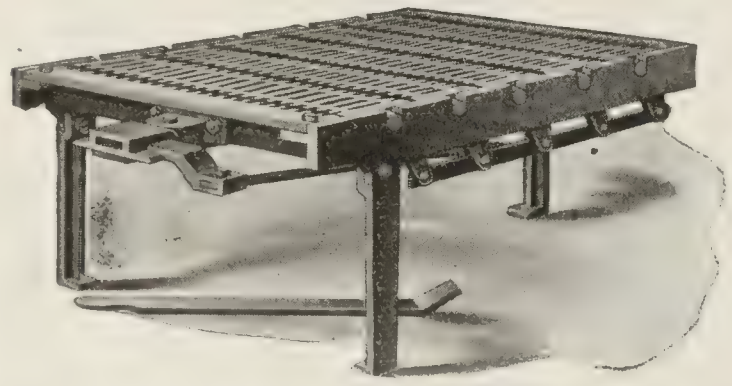
It may be that your clay is not properly mixed—that lack of uniformity starts at the dry-pan and carries through to the stock shed. Get a correct start with

The New Rust Special Clay Feeder



MARION MACHINE FOUNDRY & SUPPLY CO.
BOX 395 MARION, IND.

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

It enables that plant to buy fewer carloads of coal, and to pay less for the carloads that it does buy. For—the Canton Kiln Grate burns less coal; it does it thoroughly and economically, and it can burn a low grade of coal—to accomplish the same results that you are getting (or want to get) now.

Bulletin B contains complete information on use of grate in kilns.

THE CANTON GRATE CO.
1706 Woodland Ave., CANTON, OHIO

cently by the decision of Attorney General Turner, to the effect that only the sum of $780,000, which is now available, can be used to pay off the road-building liabilities incurred, as of February 16 of this year. The general impression and understanding was that contracts could be let in anticipation of future appropriations, work to the amount of $8,000,000 having been let this year on that basis, according to State Highway Commissioner Cowan. It is estimated that about $5,000,000 worth of road contracts were pending on February 16, with only $780,000, as stated, to take care of them. Either the legislature, which is still in session, must provide the much larger sum needed for the continuation of the splendid work which has advanced Ohio's country highways to a point of great excellence, or, as an inescapable alternative, the work must be stopped.

PENNSYLVANIA

The Whiteman Clay Products Company, Philadelphia, Pa., has been incorporated with a $50,000 capitalization.

Elisha K. Kane, of Kushequa Brick Company, of Kushequa, Pa., spent a few days at the national capital during the latter part of April.

The plant of the Nanticoke Brick Company, Mifflinville, Pa., has been leased by T. E. Lewis, of Berwick, who will begin operations at the plant very soon.

John A. Schmitt's Sons Brick and Manufacturing Company, Wilkes-Barre, Pa., has been incorporated with a capital stock of $60,000.

Joseph Mahlon Pickering, of 235 South Twenty-third street, an attorney and chief clerk in the office of Director Porter, of the Department of Public Safety, recently married Miss Lillie Pontz, daughter of Jacob Pontz, the well known brick manufacturer of Lancaster, Pa.

Tobias and Sheridan, prominent brick manufacturers of West Hamburg, Pa., recently announced that they expect to resume operations within a short time. Although this is one of the oldest and best known establishments of its kind in the eastern part of Pennsylvania, it has been idle for some time.

John F. Brady, with offices in the Crozier Building, Philadelphia, Pa., reports having secured a large tile roofing contract from Arnold Aiman of Logan. Mr. Brady declares that he is receiving his share of the work to be had in this vicinity. He is the holder of several large orders for brick to be used in numerous operations in the line of residence work in various parts of the city.

Representative E. E. Jones, of Susquehanna, chairman of the House public roads committee, in a recent discussion before the House, at Harrisburg, relative to the provisions of a resolution presented some time ago by Representative Henry I. Wilson, of Jefferson County, brought out the fact that Pennsylvania must add $10,000,000 to its revenue if it is to make adequate provisions for improvements to its highways.

Framed in an unprecedented display of enthusiasm, a campaign for a Greater Chamber of Commerce was recently formally launched by the combined business men and interests of Philadelphia and vicinity. The attendance, numbering some 1,000 persons, which assembled at the "get together dinner" in the ballroom of the Bellevue-Stratford Hotel, was representative of practically every individual line of business or industry operating within the municipality.

Interest among the members of the brick trade of

Philadelphia and other sections of Pennsylvania has been aroused by the Jenkins Uniform Partnership bill, which recently passed both houses of the State Legislature at Harrisburg, and was signed by Governor Martin G. Brumbaugh. The new act, as it will become effective, provides for a detailed definition of the nature of a partnership and a code governing the relations of partners to each other and to those with whom they may have dealings.

Permits authorizing fully $200,000 worth of new work, dwellings, garages, sheds, etc., have been issued in Philadelphia, Pa., during the month just past. Most of the permits for residences call for brick construction.

A petition requesting that they be allowed to pave Maple street, Allentown, Pa., between Penn and Levan streets, with brick, was recently introduced in council by Attorney Ralph Schatz, representing M. S. Weidner, William G. Keck, Freeman H. Moyer, Mrs. Thomas J. Koch, Mrs. Edwin Killer and Frank A. Landis. The work is to be done at the expense of the above named people and is requested owing to the irregular drainage in the other kind of pavements that had been laid on Maple street, which had produced gutters.

At a recent meeting of the board of directors of the Philadelphia Master Builders' Exchange, seven applicants were admitted to membership; they are the H. E. Grau Company, the William Linker Company, Robert B. Lederle, the Phoenix Iron Company, John Decker & Son, W. W. Anstine and Company and the George Kessler Contracting Company. The board unanimously agreed upon the selection of the lot at Twenty-fourth and Chestnut streets as the proposed site for the new brick convention hall, which is the current topic among business organizations in this city.

Dennis Brassin, private watchman at the Galloway Terra Cotta Company, 32 and Walnut streets, West Philadelphia, recently saved his employers many hundreds of dollars worth of damage by fire. Brassin discovered a tiny blaze on the second floor of the building and immediately turned in an alarm. Firemen responded to the call and the blaze was extinguished with little damage. This fire recalls the memory of the large fire which consumed the entire plant of the Galloway company, twenty years ago. It was on Thanksgiving day and thousands of persons watching the Penn-Cornell football game saw the conflagration from their seats at Franklin Field.

It has been announced that a deal has been practically closed whereby a syndicate of New York capitalists will take over the interests of the Soisson Fire Brick Company and the Bolivar Face Brick Company, both of Bolivar, Pa. A new corporation will be organized under the name of the Conemaugh Clay Craft Company, which will take over the holdings of the two companies. The following officers of the new company have been elected: President, E. M. Houghtaling; vice-president, James B. Hammond; secretary, C. A. Fisher; treasurer, E. L. Houghtaling. E. R. Hammond is the other member of the board of directors, and, he, together with James B. Hammond, will look after the company's affairs in Bolivar. The last mentioned Mr. Hammond states that the development of the new company's plants will be on an extended scale. The transfer involves about one thousand acres of coal, fire clay and other mineral deposits and

A Guaranteed

Hook System of Burning Clay Products

Will—

Reduce your coal expenditures.

Reduce your time of burning.

Will—

Decrease the number of kilns needed, and so lower the capital investment.

Because—

A Hook Kiln

burns any kind of ware in a shorter length of time, and it does it with less coal. A Hook Kiln can be and is TURNED oftener than other types.

Therefore—

This system will lower your running expenses, will increase your capacity, and the actual plant investment is greatly reduced—

—and we can prove it

Hook Patent Kiln Co.

Main Office **Vigo, Ohio**

Canadian Office

250 Dufferin St. **Toronto, Ont.**

10 More Good Reasons

why you should install the

Underwood Producer Gas Burning System

PATENTED

11. You make a saving in labor in avoiding the necessity of cleaning furnaces after each burn, otherwise required.

12. A saving in eliminating the use of grate bars and furnace doors.

13. In Updraft kilns you prevent burning up benches and arches, which is otherwise frequent.

14. An absolutely uniform burn in up or downdraft kilns from top to bottom is always assured.

15. Any high or low temperature may be obtained at will.

16. Enables absolute control of temperature.

17. With this system you can bring an even settle throughout the kiln.

18. You can burn your product with a perfect oxidizing fire, enabling the clay to retain its own true color, or by a full reducing fire to be flashed to any degree of intensity which it will allow.

19. Draughts and general burning principles are never affected by weather conditions.

20. Applicable to any type or size updraft or round and rectangular downdraft periodic kiln already built or to be established in the future.

MORE GOOD REASONS NEXT ISSUE

Did you read those in the preceding issue of this paper? If you didn't, get a copy and read them.

The Manufacturers Equipment Co.

Everything for the Clay Worker

Dayton, Ohio, U. S. A.

four plants with a daily capacity of 125,000 refractory brick. The consideration is said to be about $500,000.

SASKATCHEWAN

The Regina (Sask.) Red Pressed Brick Company will erect an experimental plant for brick and tile, with a view to making exhaustive tests on Regina clay.

TENNESSEE

The J. W. Wells Brick Company of Chattanooga resumed operations early in March, their kilns being empty.

William Davis and Son, brick manufacturers of Knoxville, Tenn., have opened their plant for the season at its usual capacity.

The Key-James Brick Company, manufacturer of shale brick in Chattanooga, ran its plant all winter, despite depressed conditions.

The Citico Brick Company's plant at Chattanooga, Tenn., which has been idle for about two years, has again started operations with Joseph Ernest as superintendent.

A. P. Gains and Company, Chattanooga, Tenn., local dealers handling the lines of the Kentucky Fire Brick Company, Halderman, Ky., are getting some orders, but as a whole business is not very strong.

The Holston Tile Company, which is equipping a plant at McCloud, Tenn., will build a brick kiln and install equipment to manufacture hollow silo blocks from fireclay, fire-brick, furnaces for kilns, dryer cars, etc.

The New York Terra Cotta Company will furnish the terra cotta for the new shop of the Culture Clothing Store Company's four story building to be erected at Main and Monroe, Memphis, Tenn., for which site it now being cleared.

The Kingsport Brick Company, of Johnson City, Tenn., is installing additional machinery at its plant and is making a common brick. Several substantial orders have been received by the company for its product from North and South Carolina and Tennessee territory.

W. D. and C. H. LeSeur, who have a plant at Nashville, Tenn., making common and red pressed-brick, are preparing to open up after a period of idleness extending over the past six months. There are still about 1,500,000 brick in the storage sheds of the company, but the plant will be operated at a daily capacity of 40,000 brick.

The Howard Park Brick Company and the Chattanooga River Brick Company, both of Chattanooga, have had had trouble with the back-water from the Tennessee river, their pits being filled during the early part of last month.

In Chattanooga (Tenn.) and vicinity there are several clayworking plants which have been making what are called turpentine cups of clay, which are used to catch the gum from which turpentine is made, as it flows from the holes in the trees. This line of clay ware, however, has not been in great demand owing to the comparative quietness of the turpentine market and to the fact that most of these cups are now being made of metal. Some of the firms formerly manufacturing these clay cups have decided that it has become an unprofitable business and are beginning to take up the manufacture of brick and other clay products. Among these is the Krager Turpentine Cup Company of which C.

L. Krager is superintendent. This company is now turning out brick and promenade tile.

TEXAS

G. E. Richmond of 1407 Congress Ave., Austin, Tex., is interested in the building of a new brick plant.

V. Henry Holz of Commerce, Tex., will built a brick plant at San Antonio.

The Abilene (Tex.) Brick Company will rebuild the burned Lanius Brick Plant.

It is rumored that Frank Bowman will build a brick and tile plant at Post, Texas.

The Acme Pressed Brick Company of Fort Worth, Tex., wishes to secure a line of wall coping and flue lining which it can sell in competition with material of this kind which is now being shipped into Fort Worth.

VERMONT

The Drury Brick and Tile Company of Essex Junction, Vt., opened up its plant during the latter part of April and began the manufacture of brick for the 1915 season.

Arthur W. Perkins, president of the Rutland, Vt., Fire Clay Company, is planning the erection, in the near future, of a new home to be located at the corner of Curtis avenue and South Main street, Rutland. "Beachwood," the present Perkins home, is to be used for a summer home only.

VIRGINIA

H. E. Groves, of Bristol, Va., has bought a farm at Moneta, in the same state, where he will develop a feldspar mine.

WASHINGTON

The value of the new construction work undertaken in Seattle, Wash., during March was $690,000, nearly double that for the month preceding, but $230,000 less than during the month of March, 1914.

WEST VIRGINIA

Hans Watts, of Guyandotte, W. Va., is interested in establishing a paving brick plant.

The West Virginia Clay Products Company, of Charlestown, has managed to keep busy all during the past year. Its principal output is face-brick.

F. W. McIntire, president of the Marion Brick Company, of Fairmount, W. Va., will, it is said, erect a new brick plant with a 50,000 daily capacity.

The West Virginia Clay Products Company, of Charlestown, W. Va., has enlarged its plant, building two new kilns in which to burn flashed dry-pressed brick.

The Wheeling Tile Company is making hand-made floor tile, vitreous and encaustic. It claims that the prices now prevailing for this class of material are lower than is consistent with the standard maintained.

The Kanawha Brick Company, of Charlestown, W. Va., is operating its plant to capacity, making, it is said, ten million common brick a year and some hollow building block. Two new kilns have been added and a new dry pan has been installed.

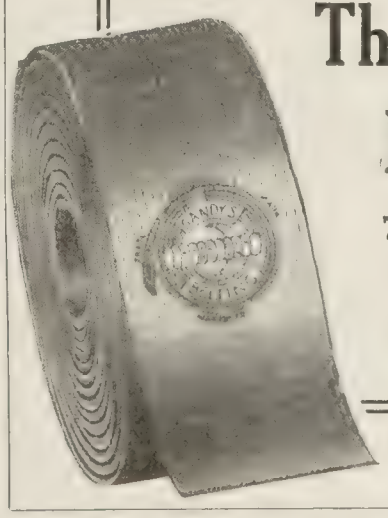
A new brick storage shed, fifty by one hundred feet, has been erected at the yard of Mossman Brothers Company, Huntington, W. Va., dealers in clay products. In addition to the other lines which this company is carrying, it has se-

Better Service at Less Expense

AN EXPERIENCE of thirty-six years warrants our saying when you adopt Gandy Stitched Cotton Duck Belting you get the best service at the least expense.
Cotton, the foundation of Gandy Belt, is low in price, and while maintaining strictly the high quality of our belting, we are able to sell it for about one-third the price of leather belting and much less than the price of rubber belting, while it does the work equally as well.

Gandy Stitched Cotton Duck Belting

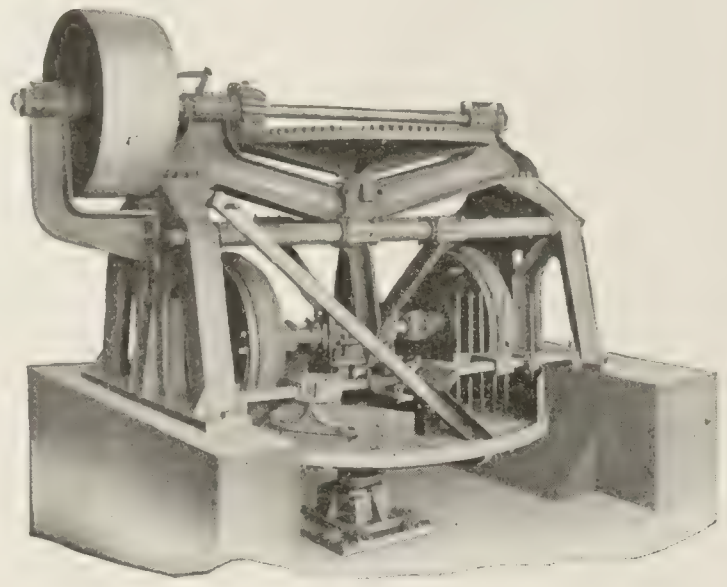
Satisfied users in all industries is the best proof of the good service obtained from "Gandy," the Pioneer Stitched Cotton Duck Belt. We will gladly send you samples, prices and full information.



The Gandy Belting Co.

732 W. Pratt St.,
Baltimore, Md.

New York Office
36 Warren Street



Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

cured the local agency for the American Terra Cotta Company, of Baltimore, Md.

The West Virginia Paving and Pressed Brick Company, of Huntington, W. Va., is now preparing to place on the market a rough-textured face-brick. This company now turns out a large quantity of vitrified paving and face-brick, its daily capacity being 60,000 brick. However, with the addition of the new line of rough-textured face-brick, additional machinery will be installed to bring the capacity up to 100,000 brick per day. The plant of the company operates during the entire year. A new manager, D. D. Evans, is now in charge.

The Huntington (W. Va.) Roofing and Tile Company is preparing to begin the manufacture of a Spanish roll roofing tile in green and red. Heretofore this company has manufactured a flat tile made from a shale burned to vitrification, and producing a tile which is practically impervious to moisture. This plant operates only during the warm months of the year. Its shale is removed by blasting and is allowed to remain in storage some time before being used so as to be thoroughly weathered.

WISCONSIN

The Hollandale (Wis.) Tile & Brick Company has just been incorporated with a capital stock of $15,000. F. W. Hall, Estella Rowe and E. H. Whitcomb are the incorporators.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

Evidently one of the south's valuable assets is being neglected, states the "Atlanta (Ga.) Journal," recently in an editorial. Georgia, Florida, Alabama, Tennessee, the Carolinas and Virginia are capable of supplying the entire demand for American clays and also of competing in foreign markets. The fact is, however, they are not doing so. Ninety-one per cent of the country's total output of pottery is manufactured in six states—Ohio, New Jersey, West Virginia, New York, Pennsylvania and Indiana. To these states go most of the earnings of an industry whose output in 1913 aggregated nearly $38,000,000 and whose importance is growing steadily. The "Journal" supports a suggestion by Joel H. Watkins, geologist of the Southern Railway Company, that the federal bureau of mines establish at some central southern point a depot for the proper mixing and grading of the output of southern mines to encourage the mining of kaolin by small operators, and the establishment of more potteries near the sources of the raw material.

The Consumers' Porcelain Company, of New Lexington, Ohio, has declared a six per cent dividend, this action being taken at its recent annual meeting, at which it was stated that the past fiscal year of the company has been extremely successful. It was reported by L. F. Holderman, general manager and treasurer, that the company has on hand enough orders to keep the plant busy for an entire year, thus warranting the continuation of its prosperity for that period, at least. Mr. Holderman was reelected to his two positions, other officers being the following: George H. Barnes, of Coshocton, Ohio, presi-

dent (re-elected); H. A. Lowe, New Lexington, vice-president, and J. W. Kinnike, secretary. These officers, with J. F. McCarron, were elected as members of the board of directors.

There are still a number of suits against china importers for alleged undervaluation. In these the government sought to recover a large sum of money claimed to be due because the goods had not come into the country at a valuation warranted by their worth in this market. A few of the least important suits were dropped, but some of the largest and by far the most important were allowed to remain on the docket. Recently persons interested in matters of that sort have been wondering what has become of the litigation, and whether the government intends to prosecute the suits or allow them to fail. Nothing has been heard of these suits for months.

The demand for goods in the Canadian market continues to prove increasingly satisfactory. While it was not as good as it was before the war, orders have been very satisfactory and shipments on account of the business booked during the Pittsburgh Glass and Pottery Show have been most satisfactory. There is increasing confidence that more Canadian business is on the way, as absolutely no ware from Europe, except what is being shipped from England and France, and possibly Denmark, is finding its way up the St. Lawrence. The Japanese trade in Canada also is improving, particularly in semi-porcelain dinner ware.

Central Ohio pottery manufacturers at Zanesville, appointed a committee composed of G. F. Young, George Bush and M. H. Linn, of Zanesville; J. D. Peters, of South Zanesville; F. M. Ransbottom, Roseville, and A. E. Hull, of Crooksville, to present arguments against the railroads' ruling abolishing the stopover privilege of pottery shipments. The committee will go to Chicago April 30, to be present at the hearing before an interstate commerce commissioner. The order was to have gone into effect last December, but the Interstate Commerce Commission granted a suspension until September 1.

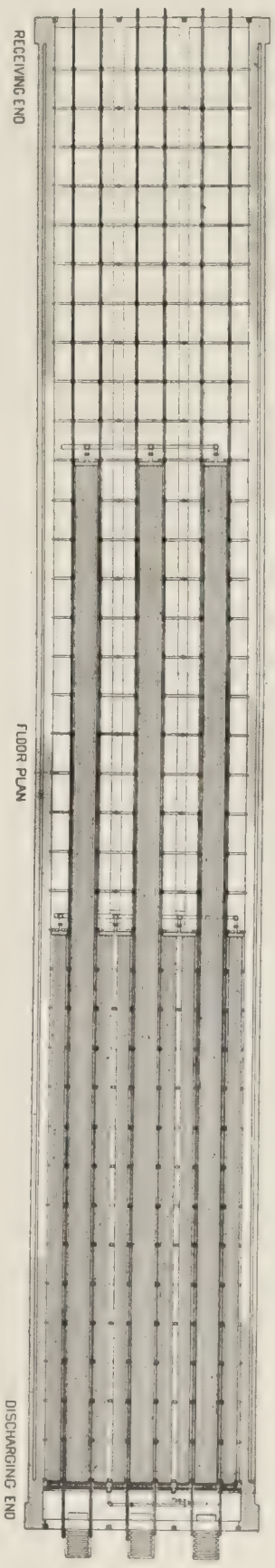
An exhibit of the wares of the Onandaga Pottery Company, of Syracuse, N. Y., was held recently at Elder & Johnston's, in Dayton, Ohio, in charge of F. J. McMillan, with considerable success. The exhibit drew much well-deserved public attention, largely by reason of the fact that demonstrations of the methods used in turning out the company's goods were given by expert workmen from the Onandaga shops, showing every stage of the process, from the clay to the painter, and through the final burning.

Samuel Cartlidge, a well known potter of Trenton, N. J., and who has been in the employ of the Thomas Maddock Pottery for a number of years, died recently following an illness of many weeks duration. Mr. Cartlidge was well known in both a social and business way. He was a member of the Iroquois Tribe, No. 93, I. O. R. M. and Local No. 49, N. B. O. P. He is survived by eight sons.

Work is being resumed at the No. 3 plant of the Homer Laughlin pottery at East Liverpool, Ohio, and the entire plant will soon be in operation. This plant has been idle since the holidays, and was among the first to close during the recent depression. Business, however, has been picking up, and the orders that are coming now indicate a steady increase.

Some time ago the Novelty Pottery Company, Chattanooga,

Bricks Won't Burn Until They're Dried



—and Bricks won't dry in wet weather; nor safely in dry, hot, windy weather; nor quickly in **any** kind of natural weather.

Why not **Make Weather** to suit your Brick and your conditions—in a

National Dryer

You can adjust it to have warm, moist air in one end, to prepare the ware for high heat, and you can have hot, dry, light air in the exit end.

You can have it without cost all day long and at small cost at night.

It makes the weather.

The National Dry Kiln Co.

1118 E. Maryland Street
Indianapolis, Ind.

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press
Auger Brick Machines
Down Delivery Tile Mills
Oil Burning Equipment
Crude Oil Engines
Piano Wire Screens
Dry and Wet Pans
Soft Clay Brick Machines
Pug Mills
Wet and Dry Clay Disintegrators
Smooth and Conical Roll Crushers
Wood Moulds
Trucks and Barrows
Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.
20 W. Jackson Blvd. Chicago, Ill.

Tenn., was organized and machinery purchased for the manufacture of flower pots and other pottery lines. This plant, which is located at Cameron Hill, has never been operated. It is expected, however, that within a few months the plant will be opened and in addition to its pottery lines, will manufacture brick.

With a large exhibit of decorated ware manufactured by the Knowles, Taylor & Knowles Pottery Company, East Liverpool, Ohio, will be largely represented at the prosperity carnival of products "Manufactured in the United States," to be held in Motor Square Gardens, Pittsburgh, May 10 to 15, inclusive.

Full capacity is the rule at the plant of the Paden City (W. Va.) Pottery Company, at Paden City, in the manufacturing of cooking ware. Plenty of orders are on the company's books, and all indications point to increasing the capacity of the works in the near fuutre. E. J. Owen is the general manager of this pottery. G. Grant Fish, a former glass manufacturer, is assistant treasurer.

E. D. Moore, formerly manager of the bookkeeping and credit departments of the Knowles, Taylor & Knowles Pottery Company, has severed his connection with that concern, and is now in charge of the credit department of the Jefferson Glass Company, at Follansbee, W. Va.

The Harley Pottery Company of Nashville, Tenn., is installing additional machinery and is working on flower pots. This plant also has a large output of stoneware. The new machinery will double its capacity and prospects are very bright for a good future business.

Henry P. Knoblock, who has been operating a novelty porcelain plant at Niles, Ohio, has been made manager of the Dresden Pottery Company, succeeding James Rinehart, who, since the reorganization, has been acting as general manager.

At a recent meeting of the board of directors of the Trenton Potteries Company a dividend of one per cent was declared upon the accumulative preferred stock.

The Pittsburgh Pottery Company, Pittsburgh, Mo., has reopened its plant after a year's idleness, and is now in full operation.

The H. R. Wyllie China Company of Huntington, W. Va., is making a new line of porcelain indirect lighting fixtures.

Freight Tariffs and Troubles

(*Continued from page* 865)

amounting to the alleged overcharge at 6 per cent from November 10, 1909.

In handing down the opinion in case No. 6583 of the Chattanooga (Tenn.) Sewer Pipe and Fire Brick Company against the Southern Railway Company the Commissioners say:

"Rate of 27.5c per 100 pounds charged by the defendant for the transportation of fifteen carloads of sewer pipe shipped from Chattanooga, Tenn., to Lakeland, Fla., found to have been unreasonable to the extent that it exceeded 25c. Reparation awarded."

The Harbison-Walker Refractories Company has been allowed reparation amounting to $46.75 against the Chesapeake & Ohio Railway Company. The reparation was

awarded because of an unreasonable rate applied on one mixed carload of fire-brick and fire-clay, forwarded on March 13, 1912, from Olive Hill, Ky., to Seth, W. Va.

Among some of the other interesting brick reparations allowed since our last issue are the following:

The Excelsior Brick Company vs. the Atchison, Topeka & Santa Fe Railway Company. A refund of $13.01 was allowed on account of an unreasonable rate applied on one carload of building brick forwarded from Fredonia, Kan., to Bucklin, Mo., on March 27, 1914.

Hydraulic-Press Brick Company vs. the Southern Railway Company. A refund of $11.58 was allowed on account of the unreasonable rate charged on two carloads of brick shipped from St. Louis, Mo., to Buechel, Ky., on April 11, 1913.

Watson-Fitzgerald Corporation vs. the Southern Railway Company. A refund of $90.75 was allowed because of an unreasonable rate applied on five carloads of common brick shipped from April 30 to May 6, 1914, from Danville, Va., to Oxford, N. C.

Sayre & Fisher Company vs. the Raritan River Railroad Company, et al. A refund of $12.50 was allowed because of the unreasonable rate charged on a carload of common brick shipped from Sayreville, N. Y., on June 27, 1914, to Dunwoddie, N. Y.

Pennsylvania Fireproofing Company vs. the Pittsburgh, Shawmut & Northern R. R. Company, et al. A refund of $49.73 was allowed on account of an unreasonable rate applied on two carloads of brick from St. Marys, Pa., to Nunda, N. Y., on July 14 and 15, 1914.

Chattanooga Sewer Pipe & Fire Brick Company vs. the Southern Railway Company, et al. A refund of $14.15 was allowed as reparation on one carload forwarded from Chattanooga, Tenn., to Greeno, Va., on April 22, 1914.

W. M. Birch Company vs. the Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company. A refund of $6.87 was allowed on account of the additional expense for drayage incurred through the misrouting of one carload of paving brick forwarded from Malvern, Ohio, to Muncie, Ind., on August 3, 1914.

National Fireproofing Company vs. the Hocking Valley Railway Company, et al. A refund of $8.75 was allowed on account of unreasonable charges made on one carload forwarded from Nelsonville, Ohio, to Mineral Point, Wis., on July 25, 1913.

The Commissioners have set May 15 as the date for the argument in case No. 7541 of the Chattanooga Sewer Pipe & Fire Brick Company against the Southern Railway Company, et al.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points

From Beach Ridge, N. Y., building and paving brick, and drain and hollow building tile, to Sayre, Pa., $1.58 per net ton.

From Beach Ridge, N. Y., building, common and paving brick, drain and hollow building tile, to East Ithaca, N. Y., $1.84 per net ton.

From Gettysburg, Pa., brick to Culpepper, Va., $2.56 per net ton.

From Hornell, N. Y., common, building and paving brick, to Greenwood, N. Y., and Shinglehouse, Pa., $1.05 per net ton.

From Bradford and Lewis Run, Pa., common, building and paving brick, to Connellsville and Genesee, Pa., and

Tear Out the Old Grates From Your Boilers

It will pay you to do so and install

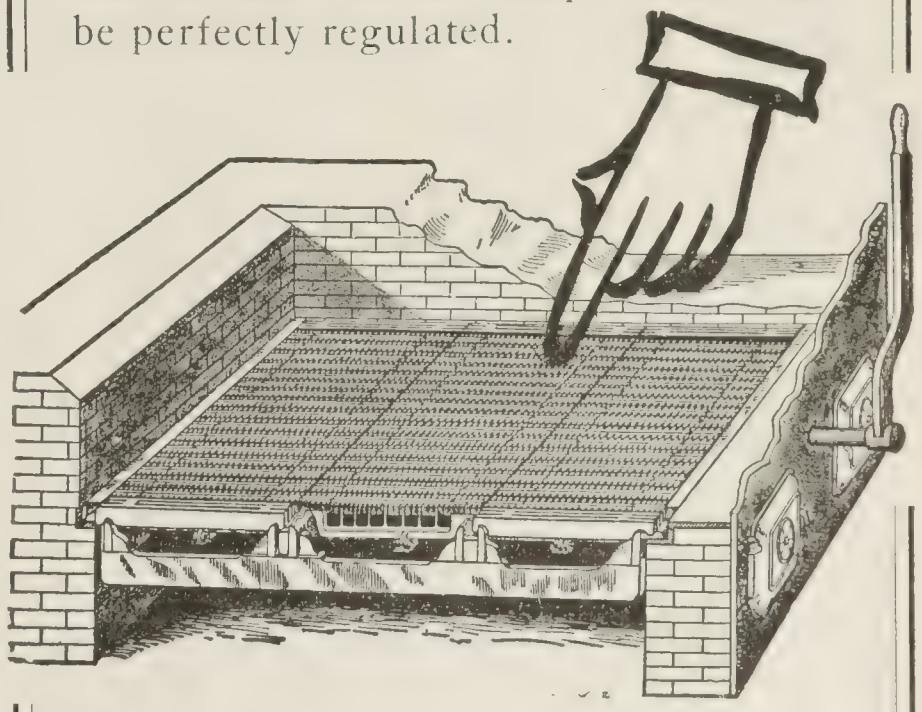
MARTIN GRATES

Are your profits going up in smoke; are you wasting volumes of unconsumed gases at each firing interval?

Are your profits going down thru your grates in half-burned ash, in unburned coal, in cooled off flues at each cleaning period?

Wouldn't It Be Better

to have grates that deliver to the flues every unit of heat in the coal. That burn a thin bed of cheap coal and can be perfectly regulated.



These Martin Grates

will do it, will pay for themselves in half a season and will pay dividends to you for years.

THE MARTIN GRATE CO.

347 S. Dearborn St. CHICAGO

I've got rid of those edge-wearing guide idlers - my Goodrich conveyor belts run so true. That saves power and makes the belt last longer.
- Supt. Wise

Goodrich Conveyor Belts are economical belts to operate. They are built by engineers who know what a belt must do *for you*—to give super-service. Hundreds of big operators *know* this—and we enjoy their *continuous* business for that reason.

Out of 45 years of rubber experience and engineering study we have produced a Conveyor Belt that leads them all in strength, true-running, edge construction and lack of shrink or stretch. It's the

Goodrich LONGLIFE CONVEYOR BELT

This belt is cutting tonnage costs every day all over the earth. Its wonderful service qualities are giving maximum satisfaction in great plants and small—under all sorts of conditions. To it has been entrusted the *big load* by operators who have investigated—and found "Longlife" their *best belt buy.* It will pay you to do likewise.

Goodrich Products:

Conveyor Belts, Elevator Belts, Transmission Belts, Hose—all kinds, Packing, Valves, etc.

The B. F. Goodrich Company
Factories: Akron, Ohio

"Get in touch with Goodrich"

Greenwood, Mill Port, Oswayo, Rexville and Whitesville, N. Y., $1.32 per net ton; to Shinglehouse, Pa., $1.05 per net ton.

From Kaulmont, St. Marys and Shawmut, Pa., clay products, to Burlington, Vt., $2.86 per net ton.

From Olean, N. Y., common, building and paving brick, to Greenwood and Whitesville, N. Y., $1.32 per net ton.

From Solvay and Syracuse, N. Y., broken brick, to Rome, N. Y., 63c per net ton.

From West Point, Pa., brick and articles taking the same rates, to Allentown, Pa., $1.16 per net ton; to Asbury Park, Long Branch, Matawan and South Amboy, N. J., $1.68 per net ton; to Bayway, N. J., Catasauqua, Pa., Jersey City, Lehigh Gap, Newark, Perth Amboy and Tremley, N. J., and Northampton, Pa., $1.26 per net ton; to Bethlehem and Easton, Pa., and Phillipsburg, N. J., $1.05 per net ton; to Bound Brook, Finderne, Flemington, High Bridge, Plainfield, Raritan and Somerville, N. J., $1.21 per net ton; to Bridgeton and Gineland, N. J., $1.48 per net ton; to Dover, Edison and Hibernia, N. J., $1.62 per net ton; to Hazard, Lehighton and Mauch Chunk, Pa., $1.32 per net ton, and to New York, N. Y., $1.84 per net ton.

From Zieglersville, Pa., brick, to Boyerstown, Pa., 80c per net ton.

From Middle West Points

From Armstrong, Barrett, Evansville, Griffin, Hovey, Martin, New Harmony, Poseyville, Stewartsville and Wendle, Ind., common brick, to Ashley, Ill., 89c per net ton, and to Eldorado, Ill., 84c per net ton.

From Carbon, Ind., brick and articles taking the same rates, to Fostoria, Ohio $1.84 per net ton.

From Carbon, Ind., brick, to Fostoria, Mich., $1.84 per net ton.

From Hamilton, Ill., brick and articles taking the same rates, to Carthage, Ill., 3.4c per cwt.; to Clifton, Clinton, and Davenport, Ia., and to Denrock, Frederick, Galesburg, Galva, Gladstone, Jacksonville, Lewiston, Lombardville, Moline, New Boston, Rock Island, Rushville and Quincy, Ill., 5.3c per cwt.; to Streator, Ill., 6.3c per cwt., and to West Burlington, Ia., 6.5c per cwt.

From Indianapolis, Ind., brick, to Bloomington, Ind., 95c per net ton, and to Bloomfield, Ind., $1.05 per net ton.

From Ottawa, Ohio, hollow and building brick, to Cleveland, Ohio, $1.10 per net ton; to Detroit, Mich., $1.05 per net ton; to Lima, Ohio, 53c per net ton, and to Toledo, Ohio, 63c per net ton.

From Quincy, Ill., brick and articles taking the same rates to Hannibal, Mo., 3.2c per cwt.

From Western Points

From Fort Dodge, Iowa, brick to Omaha and South Omaha, Neb., 6c per cwt.

From Versailles, Mo., brick (except bath and enameled), fire clay and fire clay tile, to Medora and Hutchinson, Kansas, 13c per cwt.

From Southern Points

From Causey, S. C., common brick to Tillery, N. C., $3 per thousand.

From Dillon, S. C., common brick, to Lumberton, N. C., $1.60 per thousand.

From Melville, Mont., Lake Coal Company, Cave Springs, O'Rear Sand Spur and Hixson, Tenn., common and pressed brick to Memphis, Tenn., 9½c per cwt.

From Society Hill, S. C., common brick, to Lumberton, N. C., $1.85 per thousand.

From West Marion, S. C., common brick, to Lumberton, N. C., $2.00 per thousand.

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Axles.
Lehigh Car, Wheel & Axle Works.

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Link-Belt Co.
Manufacturers Equipment Co.
Marinette Iron Works.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.
Martin Brick Mach. Mfg. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Manufacturers Equip. Co.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Car Movers.
Marion Machine, Fdry. & Sup. Co.
Sackett Screen & Chute Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

Cement Filler.
Lehigh Portland Cement Co.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.
Stevenson Co.
Toronto Fdry. & Machine Co., Inc.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Link-Belt Co.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Link-Belt Co.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Coloring.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Machine Mfg. Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Specialty Wire Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Draft Gages.
Ceramic Supply & Cons. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Sturtevant Co., B. F.
Toronto Fdry. & Machine Co., Inc.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Martin Brick M. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Phillips & McLaren.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

THE BUYERS' DIRECTORY—Continued

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Ball Engine Co. (Erie Shovel).
Link-Belt Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Price Electric Co.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Marinette Iron Works.
Mathews Gravity Carrier Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Copping Bros.
Deavitt, H. M.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Equip. Co.
Sturtevant Co., B. F.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Copping Bros.
Freese & Co., E. M.

Explosives.
Du Pont Powder Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.
Sturtevant Co., B. F.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Stevenson Co., The.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Cincinnati Frog & Switch Co.
Toronto Fdry. & Machine Co., Inc.

Fuel Economizers.
Sturtevant Co., B. F.

Furnaces.
Brown Instrument Co.
Stupakoff Laboratories.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Fate, J. D. Co.
Link-Belt Co.
Nuttall Co., R. D.
Toronto Fdry. & Machine Co., Inc.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Martin Brick M. Mfg. Co., H.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Marion Mach., Fdry. & Supply Co.
Martin Grate Co.
Murray Iron Wks. Co.
Toronto Fdry. & Machine Co., Inc.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Insulated Wire.
Goodrich Co., B. F.

Insurance.
Read & Day.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Equip. Co.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Locomotive Cranes.
Link-Belt Co.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Cincinnati Frog & Switch Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.
Toronto Fdry. & Machine Co., Inc.

Powder.
Du Pont Powder Co.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Rodgers Eng. Co., L. E.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

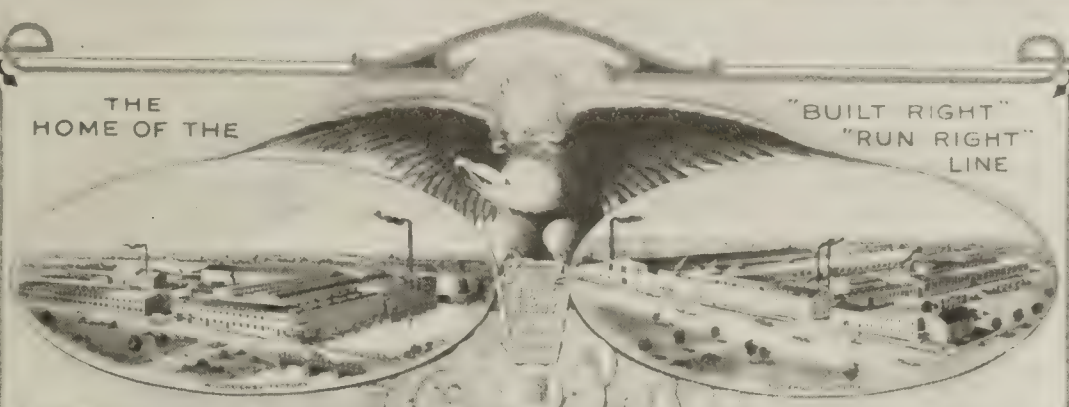
Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons. J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Pug Mill Repair Parts.
Lehigh Car, Wheel & Axle Wks.

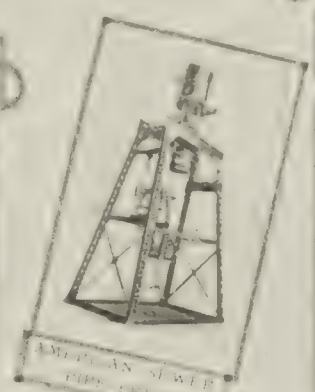
Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

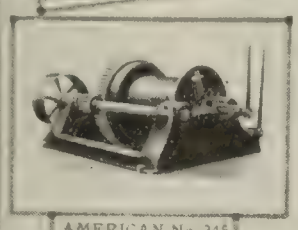
Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

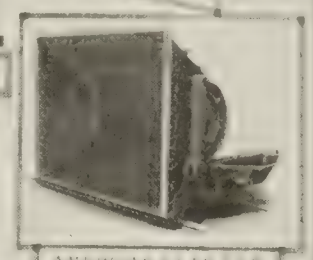
Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Price Electric Co.
Stupakoff Laboratories.
Thwing Instrument Co.



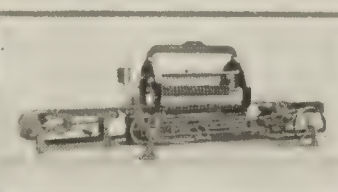

AMERICAN No. 292 REPRESS



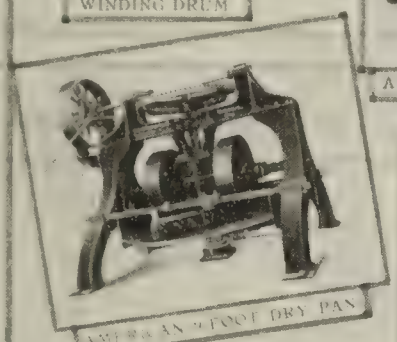

AMERICAN No. 245
WINDING DRUM




AMERICAN No. 291 PUG MILL


AMERICAN No. 20
ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN 7-FOOT DRY PAN



INCREASED CAPACITY
INCREASED PROFITS

When you find it advisable to make changes in your plants it will be well to remember to ask for information about:

Our New Line of Auger Machines
Our New Line of Pug Mills
Our New Line of Automatic Cutters

These are all essential to profitable production and they have all been designed to increase capacity and decrease cost of operation. That means increased profits.

There are no other machines that will compete with these. Get complete descriptions and judge for yourself.

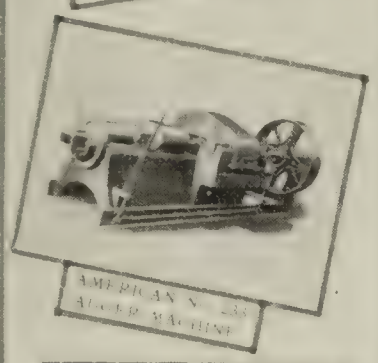
The Haigh Continuous Kiln will save about a half of your burning cost. Ask for catalog and particulars.

The American Steam Shovel will reduce your clay gathering cost.

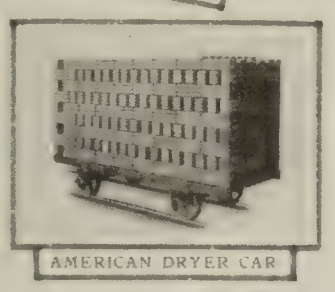
We supply large and small wants with equal care.

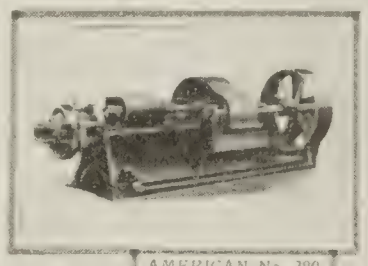
The American Clay Machinery Co.

Bucyrus, Ohio



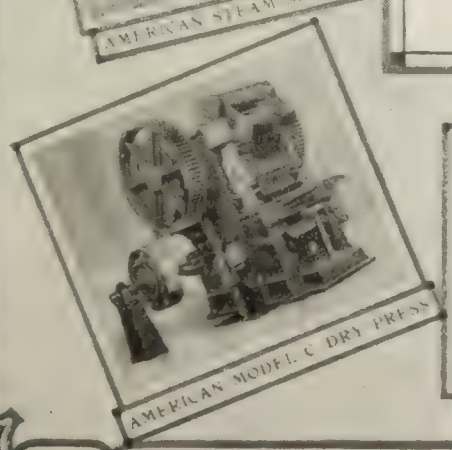

AMERICAN WASTE
HEAT DRYER


AMERICAN DRYER CAR

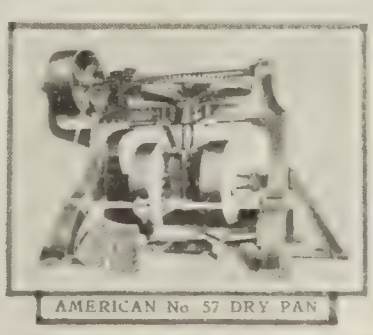

AMERICAN No. 290
AUGER MACHINE

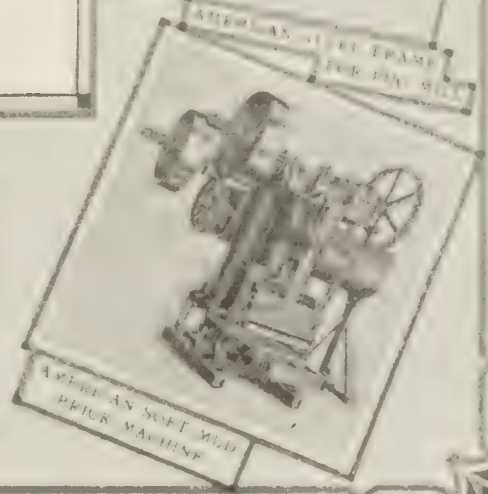

AMERICAN STEAM SHOVEL




AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No. 57 DRY PAN



We Solicit the Large or Small Wants of Every Clayworker.

THE BUYERS' DIRECTORY—Continued

Quartz Glass Articles.
Engelhard, Chas.

Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Frank, M. K.
Foster Co., L. B.
Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.

Railway Equipment (Industrial.)
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Rattler.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons, J. C.

Revolution Indicators.
Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.
Cling-Surface Co.

Roofing Tile Machinery.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Martin Bk. Mach. Mfg. Co., H.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Link-Belt Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Stevenson Co., The.
Weller Mfg. Co.

Sewer Pipe Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.
Stevenson Co.
Toronto Fdry. & Machine Co., Inc.

Shale Planer.
Arbuckle & Co.

Shovels (Hand).
Sackett Screen & Chute Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Silo Front.
Zook, G. W.

Soft Mud Brick Machines.
American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Wallace Mfg. Co.

Sprocket Wheels.
Link-Belt Co.

Steamers (Clay).
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.
Brown Instrument Co.

Steam Separators.
Canton Grate Co.

Steam Shovels.
American Clay Machy. Co.
Ball Engine Co. (Erie Steam Shovel)
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Steel Pallets.
Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Ties.
Cincinnati Frog & Switch Co.

Steel Towers.
Caldwell Co., W. E.

Supplies.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Steele & Sons. J. C.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.
Weller Mfg. Co.

Switches and Frogs.
Cincinnati Frog & Switch Co.
Toronto Fdry. & Machine Co.

Tanks.
Caldwell Co., W. E.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.

Thermometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Price Electric Co.
Standard Dry Kiln Co.

Tramways.
Ambursen Co.

Transfer Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co., Inc.

Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co., Inc.

Unloading Devices for Pans.
American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.
Toronto Fdry. & Machine Co., Inc.

Water Tanks.
Caldwell Co., W. E.

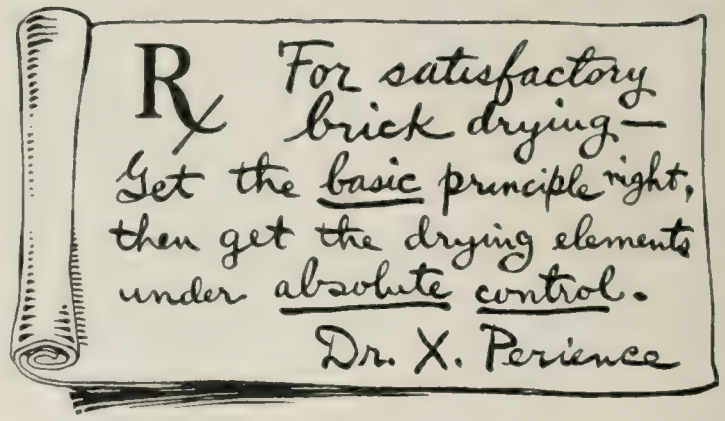
Wet Pans.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.
Toronto Fdry. & Machine Co., Inc.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles (Car).
Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

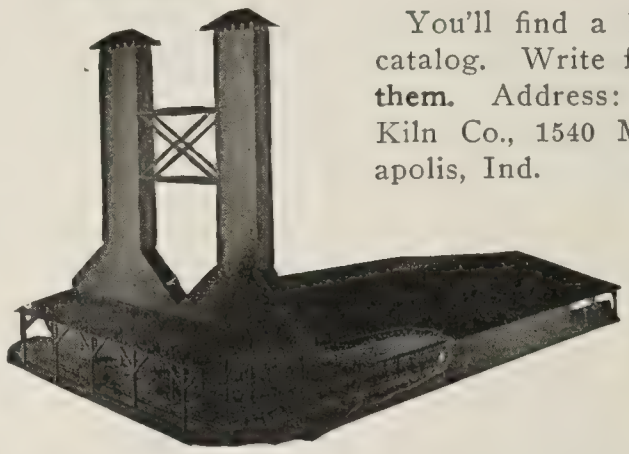
Winding Drums.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.



Over 25 Years of Success

proves that the basic principle of The Standard Natural Draft Steam Drier is correct. As to its perfect adaptability to suit **clays of all natures,** ask any Standard Drier user.



You'll find a list of users in our catalog. Write for it—then write to **them.** Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.



Chillicothe Street
Portsmouth, Ohio
Pitch filled
1895



Main Street
Butler, Pa.
Paved
1891



Euclid Avenue
Cleveland, Ohio
Laid
1883 or 1884



East Rich Street
Columbus, Ohio
Pitch filler finished June 22,
1892



West Fourth Street
Newport, Ky.
Paved
1894

Barrett's PAVING PITCH

It lasts as long as the pavement

THESE pavements are pretty old, but the original Barrett's Paving Pitch in the joints is still on duty and is still maintaining a perfect seal against the intrusion of water and frost.

It still clings to the blocks in every kind of weather regardless of the expansion or contraction.

Chemically the pitch in these joints is just as good as it ever was and if it could be taken out, it could be melted up and used over again in a new pavement.

In none of these old pavements is to be found a single crack, for every joint is an expansion joint.

The pavements are much quieter than if the joints were filled with cement and the footing for horses is better because a shallow groove is left at the top of each joint.

From the viewpoints of satisfaction and economy, no other filler is equal to Barrett's Paving Pitch.

We point to the illustrations herewith, and to many other streets all over the country with similar records of efficiency, to demonstrate the truthfulness of our claims.

Booklets free on request.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston
St. Louis Cleveland Cincinnati Pittsburgh
Detroit Birmingham Kansas City Minneapolis
Salt Lake City Seattle
The Paterson Mfg. Co., Limited: Montreal, Toronto, Winnipeg, Vancouver, St. John, N. B., Halifax, N. S., Sydney, N. S.

TRADE B MARK

8,000 SOFT MUD BRICK PER HOUR

is the guaranteed capacity of our brick machine with automatic mold dumper combined.

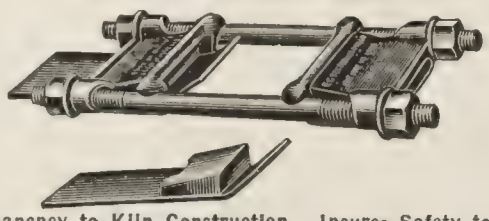
¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

ECTMCo

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction. Insures Safety to Kiln Contents.

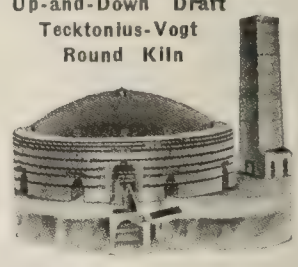
WROUGHT IRON BANDS

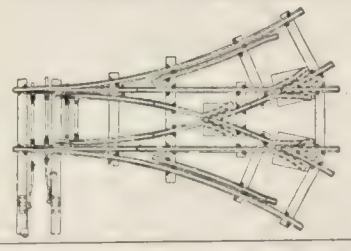
Wall and Crown Guides
Crown Covers and Ventilators

Write for
Discount and Net Prices

E. C. Tecktonius Mfg. Co.
Racine Junction, Wis., U. S. A.

Up-and-Down Draft
Tecktonius-Vogt
Round Kiln





TRACK EQUIPMENT

THE CINCINNATI FROG & SWITCH CO.

CINCINNATI, OHIO

Catalog C Pictures it All

Frogs, Switches, Switch Stands, Portable Track, Etc.



Build with Brick

Sheet Steel Signs

$5.00 per hundred

Write for prices of signs with your name imprinted

BRICK & CLAY RECORD
445 Plymouth Ct., Chicago

Build with Brick

THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

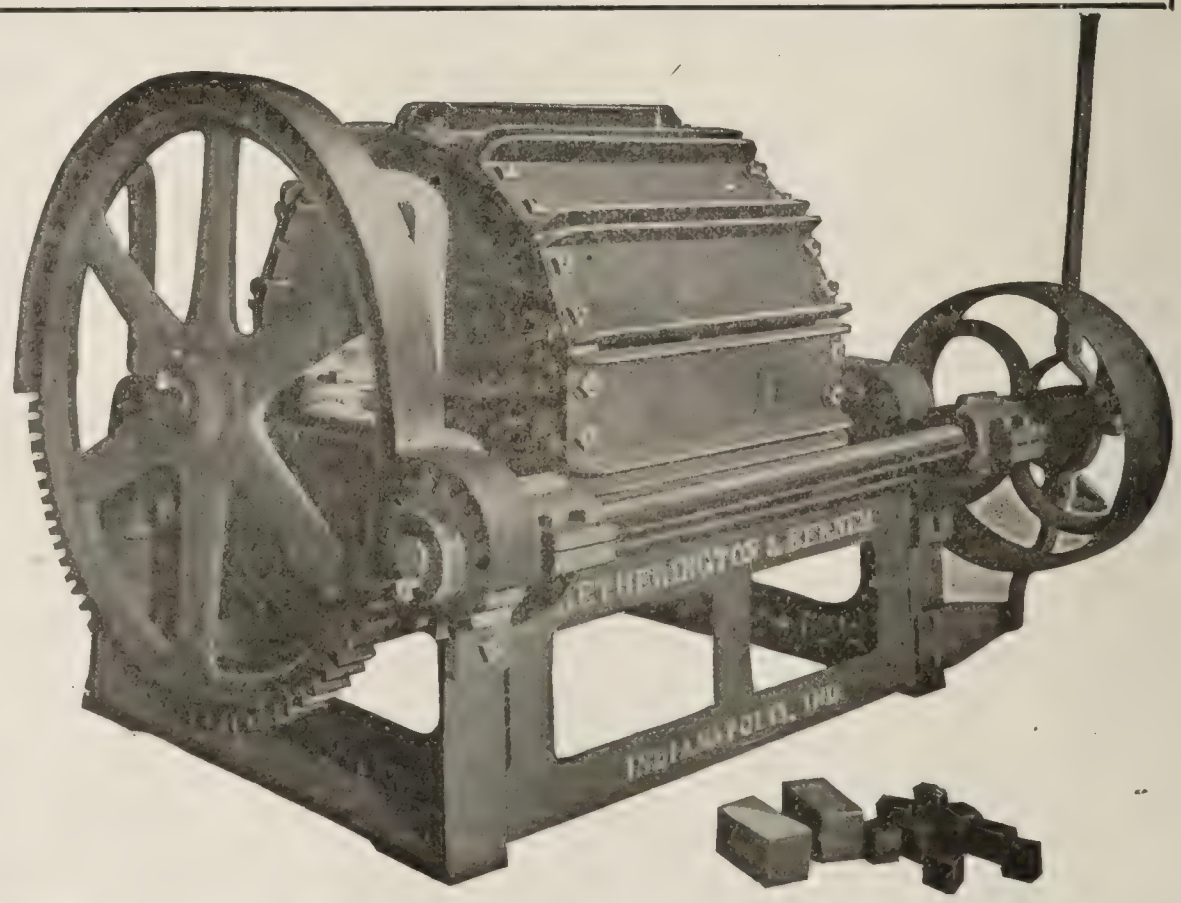
LATEST IMPROVEMENTS

and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

For descriptive circular and prices address

HETHERINGTON & BERNER

INDIANAPOLIS, INDIANA



A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Long-head Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Long-head Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.,	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O. 3
Keller Brick Co., The, Cuyahoga Falls, O. 8

BRICK (COMMON)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 7
Keller Brick Co., The, Cuyahoga Falls, O. 8
Metropolitan Paving Brick Co., Canton, O. 6

BRICK (FACE)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
American Enameled Brick & Tile Co., New York, N. Y. 8
Bradford Pressed Brick Co., Bradford, Pa. 7
Hydraulic Press Brick Co., St. Louis, Mo. 8
Keller Brick Co., The, Cuyahoga Falls, O. 8
Kimbell Brick Co., S. S., Chicago, Ill. 8
McArthur Brick Co., McArthur, O. 8
Stark Brick Co., Canton, O. 8

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill. 4
Brighton Fire Brick Co., New Brighton, Pa. 3
Chicago Retort & Fire Brick Co., Chicago, Ill. 3
Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, O. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3
Maurer & Son, H., New York City 3
Mexico Brick & Fire Clay Co., Mexico, Mo. 4
Jos. Soisson Fire Brick Co., Bolivar, Pa. 3
Southern Fire Brick & Clay Co., Chicago 4
St. Louis Vit. & Fire Brick Co., St. Louis, Mo. 4

BRICK OR BLOCK (PAVING)
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 7
Barr Clay Co., Streator, Ill. 7
Bessemer Limestone Co., Youngstown, O. 5
Big Four Clay Co., Canton, O. 6
Carlyle Paving Brick Co., Portsmouth, O. 6
Clinton Paving Brick Co., Clinton, Ind. 5
Danville Brick Co., Danville, Ill. 6
Deckman-Duty Brick Co., Cleveland, O. 5
Hamburg Vit. Brick Co., Philadelphia, Pa. 6
Harris Brick Co., Cincinnati, O. 5
Hocking Valley Brick Co., Columbus, O. 6
Mayer Brick Co., C. P., Bridgeport, Pa. 4
Metropolitan Paving Brick Co., Canton, O. 6
Murphysboro Paving Brick Co., Murphysboro, Ill. 4
Purington Paving Brick Co., Galesburg, Ill. 6
Shawmut Paving Brick Co., Shawmut, Pa. 6
Sterling Brick Co., Olean, N. Y. 4
Terre Haute Vit. Brick Co., Terre Haute, Ind. 7
United Brick Co., Conneaut, O. 5

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa. 4

DEALERS
American Clay & Cement Corp., Rochester, N. Y. 7
Bonner & Marshall Brick Co., Chicago, Ill. 7
Kimbell Brick Co., S. S., Chicago, Ill. 8
Globe Brick Co., East Liverpool, O. 8

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O. 6

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill. 8

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa. 4
Davis Fire Brick Co., Oak Hill, O. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3

SALT GLAZED BRICK
Stark Brick Co., Canton, O. 8

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (ROOFING)
National Roofing Tile Co., Lima, O. 7

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.
New Brighton, Pennsylvania

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.** *Sales Office,* **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.
Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX
FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.
208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

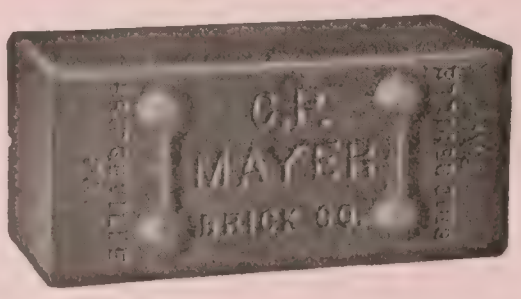
High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

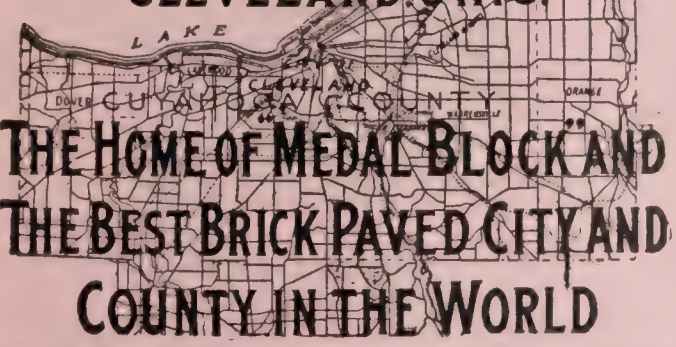
Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

THE DECKMAN-DUTY BRICK CO

CLEVELAND, OHIO



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

TEN for a cent

Gummed labels to stick on mail matter and express parcels.

Build with Brick

$1.00 per thousand

any one of the three or assorted any way you may choose.

Pave with Brick

Printed in dark blue on white paper, perforated like postage stamps and padded in 1,000 lots.

Tile Your Farm
WITH EVERLASTING BURNED CLAY

Send your order in now—stick a sign on every envelope and package that leaves your office.

BRICK & CLAY RECORD

445 PLYMOUTH COURT CHICAGO

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

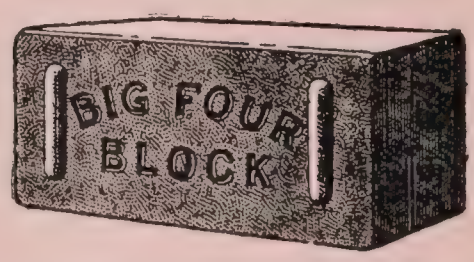
Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.

City National Bank Bldg. Canton, Ohio

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

---

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. **McArthur, Ohio**

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

ALLIANCE RUG BRICK

Excel all other brick as to texture and beauty of coloring. The chromatic scale of colors runs through the beautiful Rug-texture faces of these brick, most of the brick showing **three** or **four** or **more** of the seven primary colors. One of the most popular sellers in America today.

Mr. Agent, this brick will get you business. Write for samples.

The Alliance Brick Co., **Alliance, Ohio**

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

L. D. BINYON, President — **H. L. MATZ**, Vice-President — **JAS. A. HOGAN**, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory South River, N. J. — **General Office,** 1182 Broadway, N. Y.

THE CHASE DRYER CARS

With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*

The Chase Fdry. & Mfg. Company

Columbus, Ohio





ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

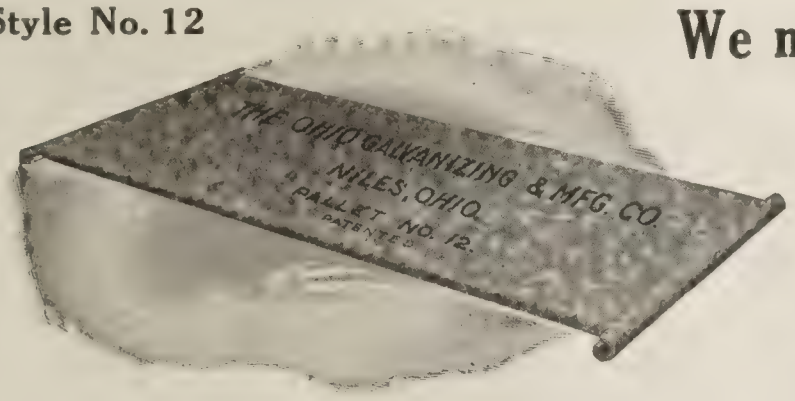
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

PAVING BRICK MANUFACTURERS

You will find the following circulars (reprints of articles appearing in "Brick and Clay Record") very helpful in fighting competitive materials.

The Truth about the Wayne County Roads (From October 7, 1913, issue)	100 500 1000	- -	$ 2.50 12.00 20.00
Chicago Concrete Streets a Failure (From March 7, 1914, issue)	100 500 1000	- - -	$ 2.00 5.00 8.50
Governor Glynn Urges Use of Brick Roads (From April 7, 1914, issue)	100 500 1000	- 	$ 4.00 15.00 20.00

BRICK AND CLAY RECORD, 445 Plymouth Court, Chicago

Transmit All the Power to Your Machines with Link-Belt Silent Chain



Two 10-H.P. Link-Belt Silent Chain Drives, Operating Pug Mills in Clay Working Plant

The Drive that is flexible as a belt—positive as a gear, more efficient than either.

The Drive that is quiet and compact.

The Drive that will run forward or backward, fast or slow—that is not affected by heat, cold or moisture.

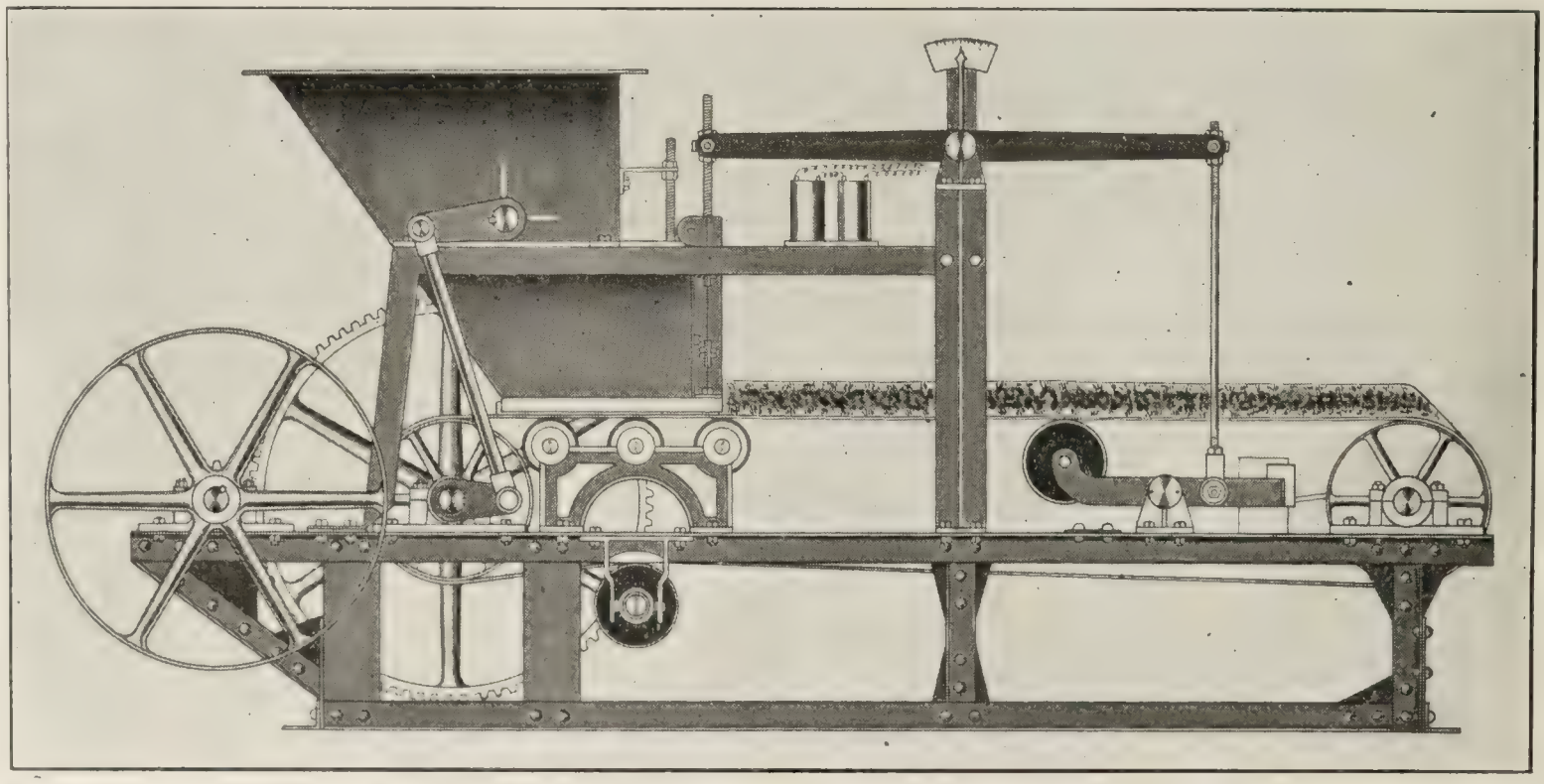
The Drive that is 98.2 per cent efficient.

Every superintendent should read our 112-page Link-Belt Silent Chain Data Book No. 125. Sent postpaid on request.

LINK-BELT COMPANY

PHILADELPHIA		CHICAGO		INDIANAPOLIS	
New York	299 Broadway	Montreal, Can	John Millen & Son, Ltd.		
Boston	49 Federal Street	Seattle	580 1st Ave., South		
Pittsburgh	1501 Park Bldg.	Denver	Lindrooth, Shubart & Co.		
St. Louis	Central Nat'l Bank Bldg.	San Francisco	Meese & Gottfried Co.		
Buffalo	698 Ellicott Square	New Orleans	Whitney Supply Co.		
Detroit	911 Dime Bank Bldg.	Birmingham	General Machinery Co.		
Cleveland	Rockefeller Bldg.	Los Angeles	204 N. Los Angeles St.		
Minneapolis	Link-Belt Supply Co.				

SCHAFFER POIDOMETERS IMPROVE PRODUCT AND SAVE MONEY



They unite any number of different materials in correct proportions and deliver them at the rate of a pre-determined number of pounds per minute.

Deliver the water in a pre-determined number of pints per minute.

Automatically temper the clay more uniformly than can be done by human efforts.

Cause the column of clay to flow from the machine more uniformly and with an even density.

Write for full information.

THE SCHAFFER ENGINEERING & EQUIPMENT COMPANY, TIFFIN, OHIO

Figures with a Punch In 'Em

Here is real selling dope for the BRICK and TILE men.

The most significant comparative costs of frame and Fire-Safe construction compiled since the famous Boston Chamber of Commerce test published by the old B. B. A. several years ago.

The SAFE has just taken bona fide bids from six widely known contractors upon a dwelling house in three types of construction. These types are: all frame, hollow tile and stucco and hollow tile faced with $18 face brick.

It is a convincing argument for the use of fire-safe materials. It should convince the hardest-headed nut in the country that he can't afford to "build to burn."

The average of all bids shows a difference of only 3.6 per cent between frame and stucco and only 7.2 per cent between frame and brick.

The complete plans, specifications and all bids have been multigraphed in book form and we will furnish them in quantities of twenty (20) or more at five (5) cents a copy.

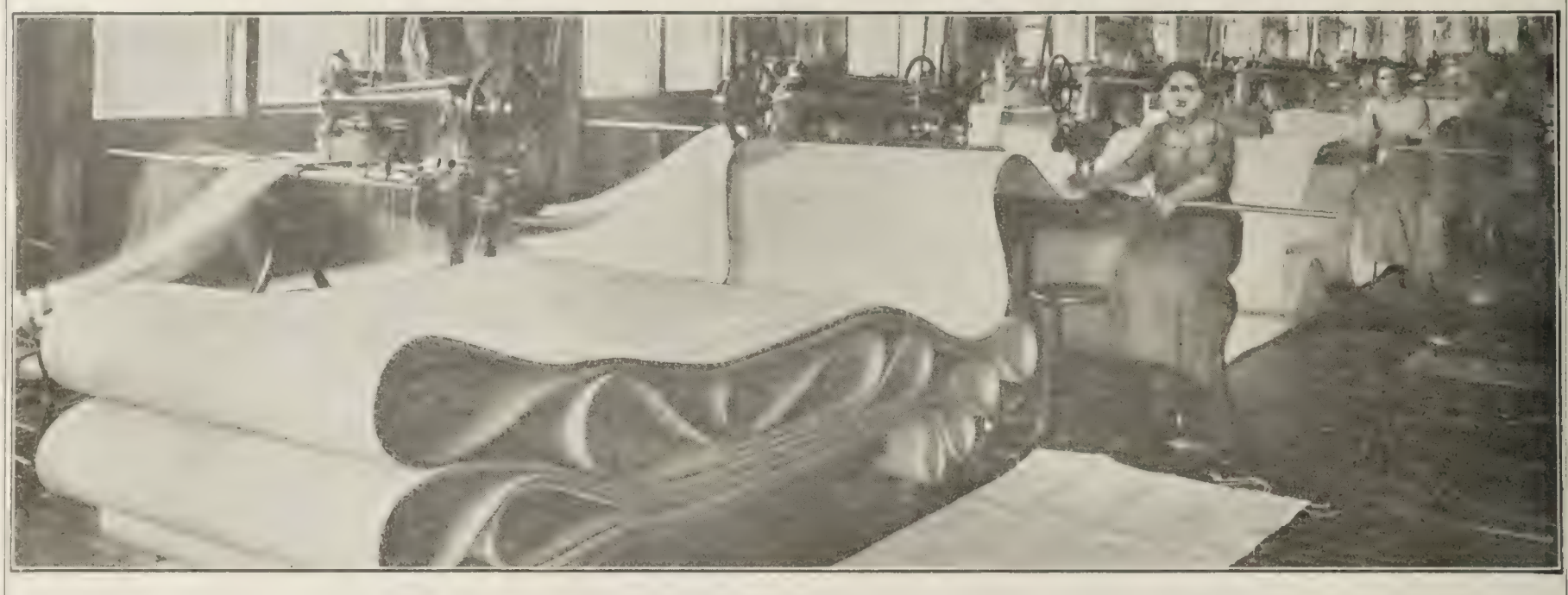
Get a supply of these and go after business with them.

Society Advocating Fire Elimination

The S-A-F-E

356 Leader-News Bldg., Cleveland, Ohio

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

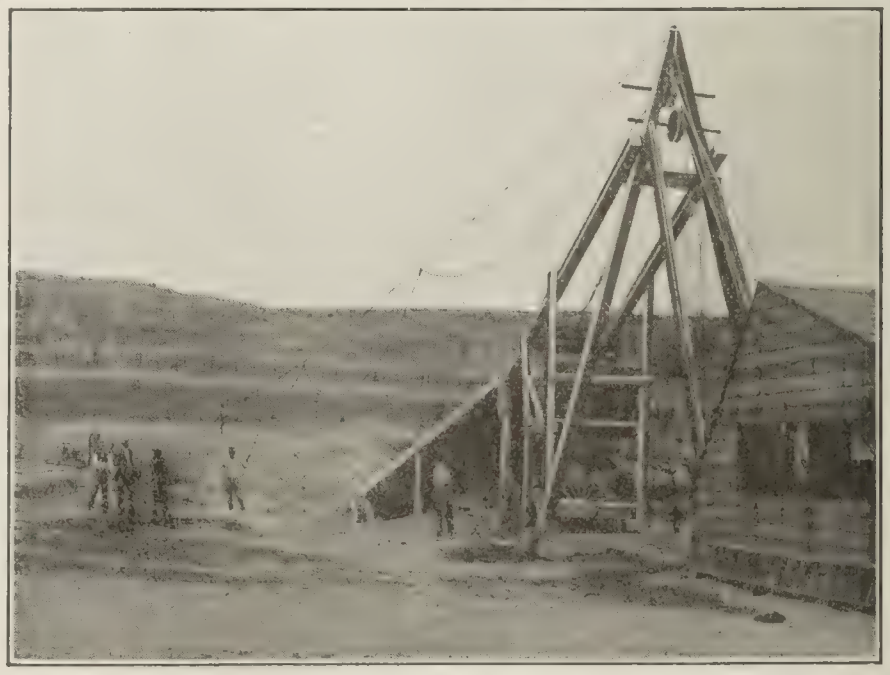
THE SAWYER BELTING COMPANY, Cleveland, O.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



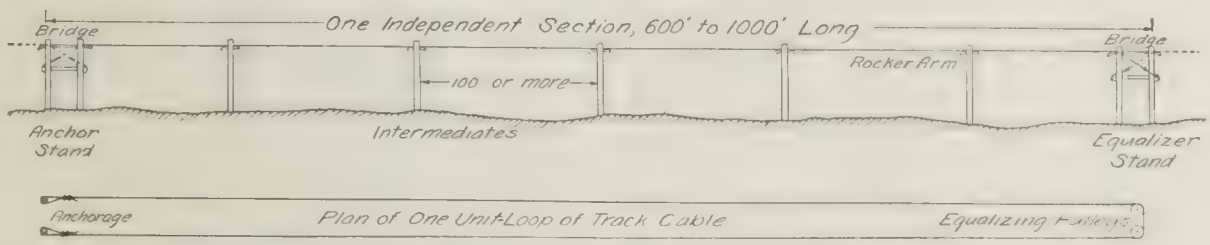
This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.
Office and Works: Macon, Georgia

FAST CONSTRUCTION BY SECTIONS

The LAWSON TRAMWAY being normally built in short independent loop sections lends itself very easily to rapid construction in the field. The diagram illustrates the general idea.



One Loop Section or Unit

Each loop is of convenient length determined by conditions and may range from 600 to 1,000 ft. The loops terminate in equalizer stands and anchor stands alternately placed.

In organizing to construct a tramway of say several miles in length the real unit of construction is not the whole tramway, but merely **one loop section.** As an extreme case therefore when plenty of help is available, the whole tramway can be built in the time that it takes to build **one loop,** simply by assigning a crew of three to five men to a single section,—all under charge of a general foreman. Each crew therefore will have to build only one stand and from five to nine intermediate supports; and string and strain the cables thereon. Where the ground is open and with easy digging a week will usually suffice to build 1,000 ft. The same operation being carried on simultaneously on all other sections,—a separate crew in the meantime framing up and setting the two terminals,—it follows that when sufficient help can be commanded a complete tramway of any practical length can be built in the time it takes to build one of its loop sections.

Of course things do not always work out as smoothly as this for rapid construction nor is it always economical or indeed necessary. The point is, however, that in emergency work the time of construction can be enormously shortened over that required for any other tramway which must necessarily be built as a whole.

Respectfully yours,

AMBURSEN CO., Tramway Department, 61 Broadway, New York

Instrument perfection has been reached in our Multiple Recorders. They give a permanent Time-Temperature Record on a maximum of Six.

HERAEUS Le Chatelier PYROMETER

"The ultimate pyrometer"

Each record is absolutely and clearly defined from the others. The Instruments have a separate indicating scale for observation. The charts are continuous and have rectangular coordinates. There is no ink or other recording medium to stick or smear or to be replenished. Pen friction is entirely eliminated.

Their extremely high resistance (about 500 ohms) makes possible the use of both Indicating and Recording Instruments on the same Thermocouples, allowing the use of a central Indicating System for the burners and a Recording System for the Superintendent in his office.

With such a system better results can be obtained and the expense of an entire Recording Installation is made unnecessary.



We Supply Pyrometer Installations

"MADE FOR YOU" not "MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD 30 Church Street NEW YORK

KING MIDAS

Had he owned and operated a Paving Brick Plant, or any other kind of clay products plant, at the time he received his proverbial golden touch, he would not have had to exercise his power, if he had operated a Powell Patented Shale or Clay Planer.

The remarkable saving in cost of getting in shale or clay, would doubtless have satisfied Midas, so that he would have put his touch on some other part of the plant other than the bank.

Know the Arbuckle first



For proof of the above statement, ask the man who operates one.

Having his raw material **cut up into fine pieces** and **automatically loaded into cars** for haulage to storage bin, at a very **small cost per ton,** is an item which would be very much appreciated by most manufacturers.

Advantages which follow the above results are: **Reduction of wear and tear on Dry Pan from one-half to three-quarters; the saving of all pit laborers, with the exception of one,** who is required to operate the Planer; **a perfect mixture of the bank from top to bottom;** a saving of all explosives formerly used; **increased capacity** and **better product.** These are also items which the manufacturer would appreciate.

The Goose that laid the golden egg every day "did not have anything on" the Powell Patented Shale and Clay Planer; built in sizes to handle your proposition from a two-foot surface clay bank to a hard shale bank 100 feet high. Any capacity delivered that is required.

Correspondence Solicited.

ARBUCKLE & COMPANY

EXCLUSIVE MANUFACTURERS

Rushville, Indiana, U. S. A.

Infringements will be promptly and vigorously prosecuted

Another Plant Using Brown Pyrometers



Burner at Pyrometer



View of a Few of the Kilns

The Penna. Clay Co., Pittsburgh, Pa., equipped their No. 3 plant with Brown Pyrometers in February, 1914; their No. 2 plant was equipped in September, 1914, and a third plant on January 11, 1915. Now all three of this company's plants are equipped with these well known instruments.

It is hardly to be assumed that men who understand the brick business, as well as the Managers of the Penna. Clay Co., would so equip their three plants if Brown Pyrometers were not a paying proposition. In installing Brown Pyrometers they equipped their plants with the best equipment they could purchase, and the equipping of one plant after another indicates clearly that they made no mistake in selecting the Brown Pyrometer.

If you would like a bulletin illustrating nine well known Brick Plants using Brown Pyrometers and the types of equipment which these plants use, it will be gladly sent you, for the asking.

THE BROWN INSTRUMENT CO.

(ESTABLISHED 1860)

PHILADELPHIA, PA.

NEW YORK PITTSBURGH CHICAGO



HOISTS

You can buy a Brewer Hoist without buying trouble with it. It will keep on hoisting without any coaxing. We have spur-geared hoists, bevel-geared hoists, spur-friction hoists and bevel-friction hoists. Large ones and small ones and all of them ***good.***

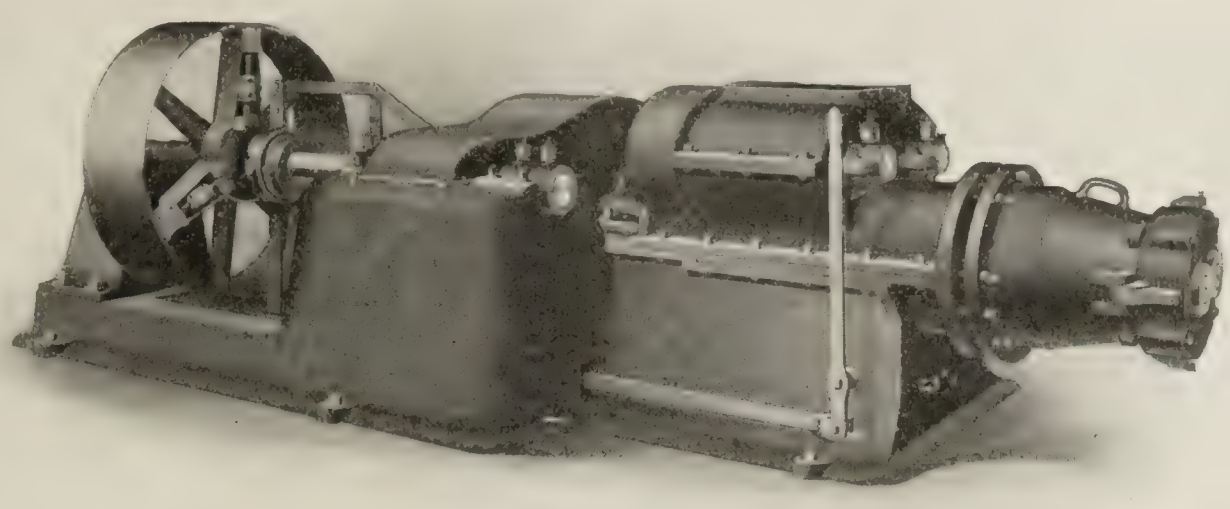


This is a Heavy Bevel-Geared Pattern

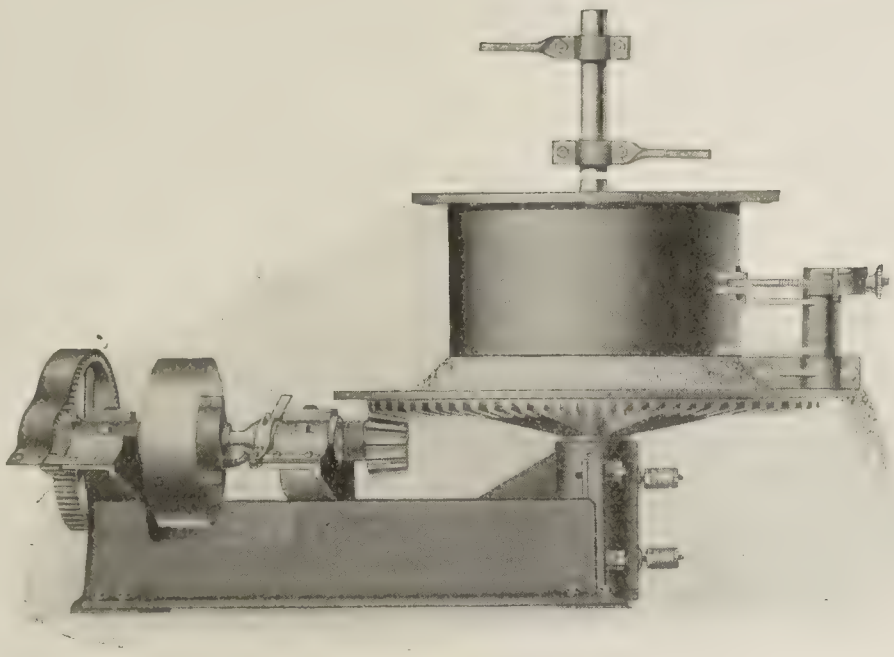
It is No. 28. It weighs 3,000 pounds. The drug is 20 in. diameter, 28 in. between flanges and the flanges are 30 in. diameter. The journals are self-oiling, the gears 4 in. face, the brake band 5 in. wide. Can be made right or left hand. Illustration above is left hand. It is enough of a hoist for the biggest plants, and we have smaller ones for the others.

If you ask for our catalog you will get it

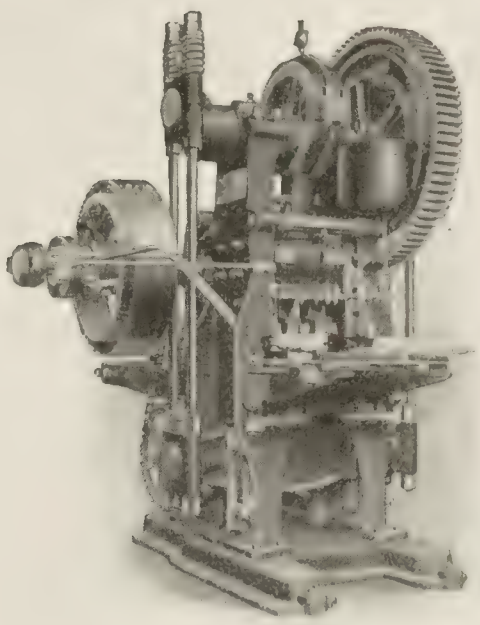
H. BREWER & COMPANY, Tecumseh, Mich.



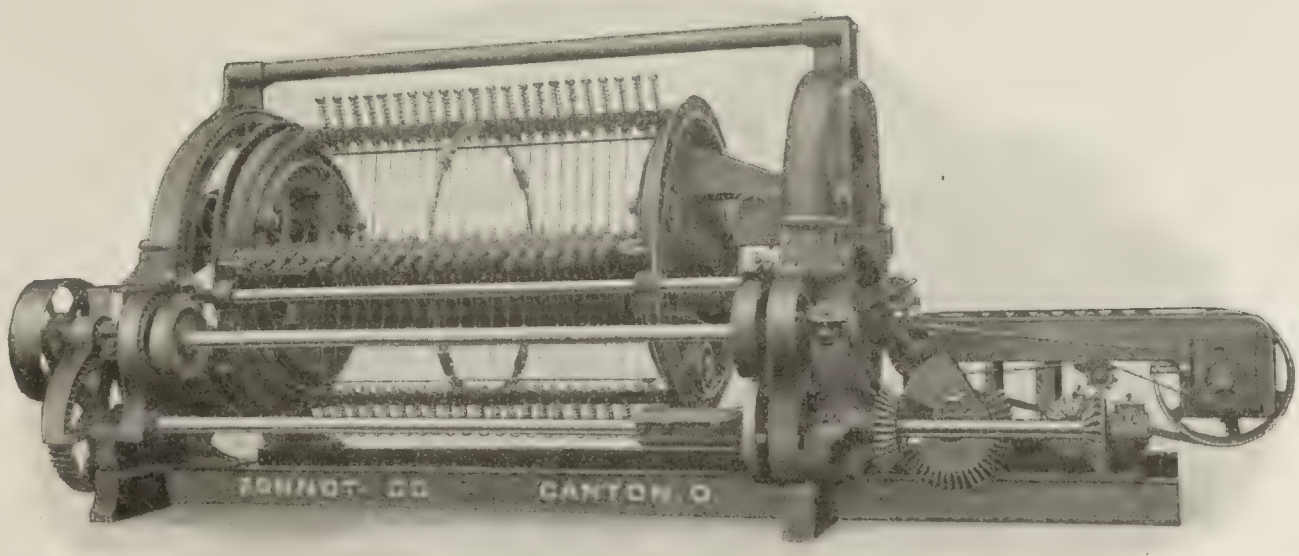
NO. 17 HOLLOW-WARE MACHINE, capacity 100-125 tons per day.



CLAY FEEDER



BONNOT REPRESS

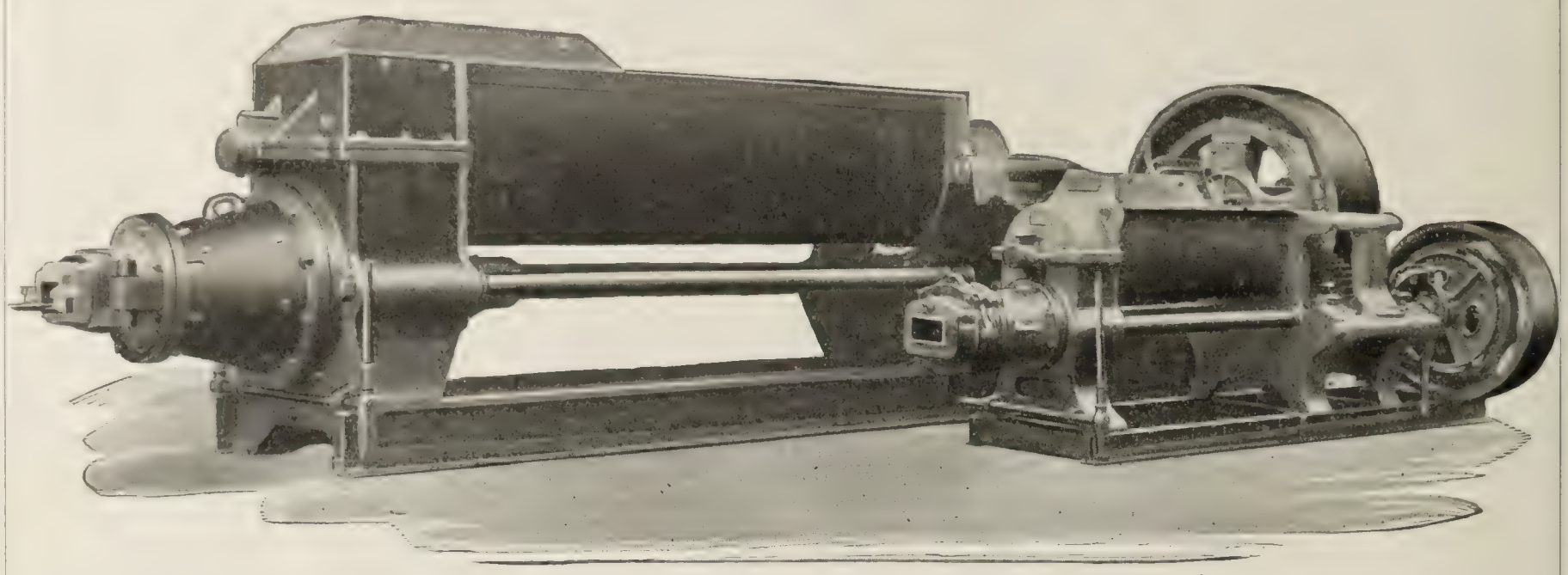


ROTARY AUTOMATIC CUTTING TABLE

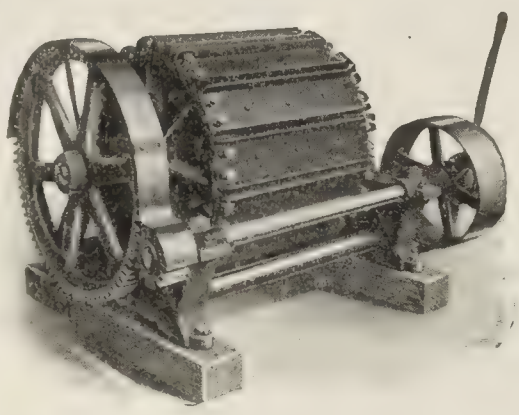
THE BONNOT COMPANY
CANTON, OHIO

909 N. Y. Life Bldg.
KANSAS CITY, MO.

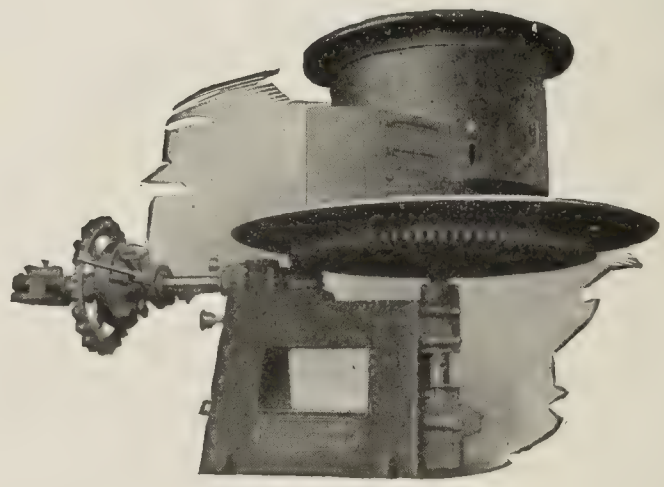
211 Higgins Bldg.
LOS ANGELES, CAL.



The UNION Brick Machine is built in twenty-two sizes and patterns—direct geared and countergeared. They are used in a large percentage of the most successful paving brick and building brick plants in the country.



A dependable testing rattler. Complies fully with the National Paving Brick Manufacturers' Association specifications.



An improved automatic disc feeder with renewable wearing plate and renewable thrust bearing. Sprocket chain or belt drive.

E. M. FREESE & CO.

130 SOUTH STREET GALION, OHIO

Dependable Machinery of Proven Efficiency

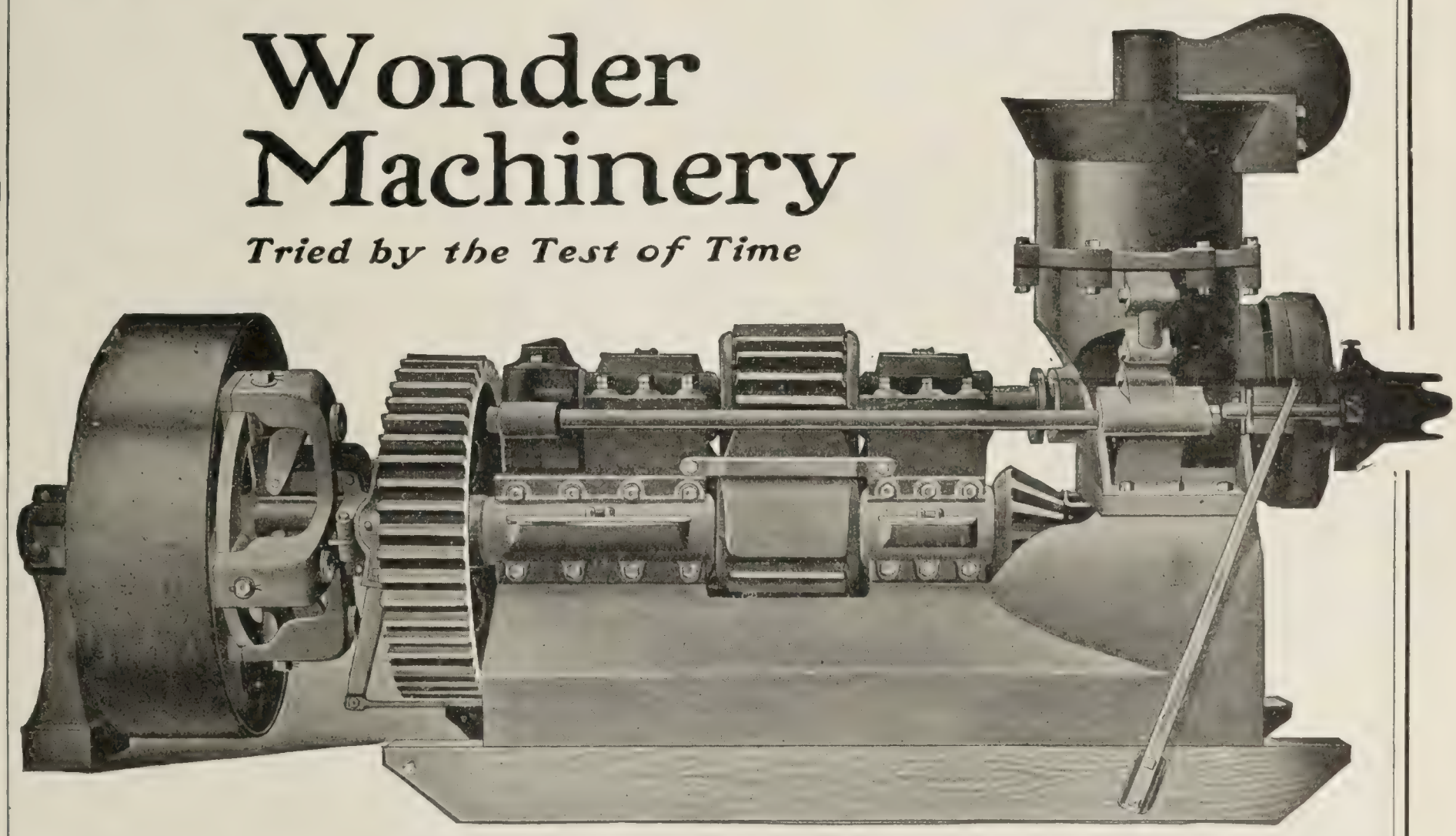
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio

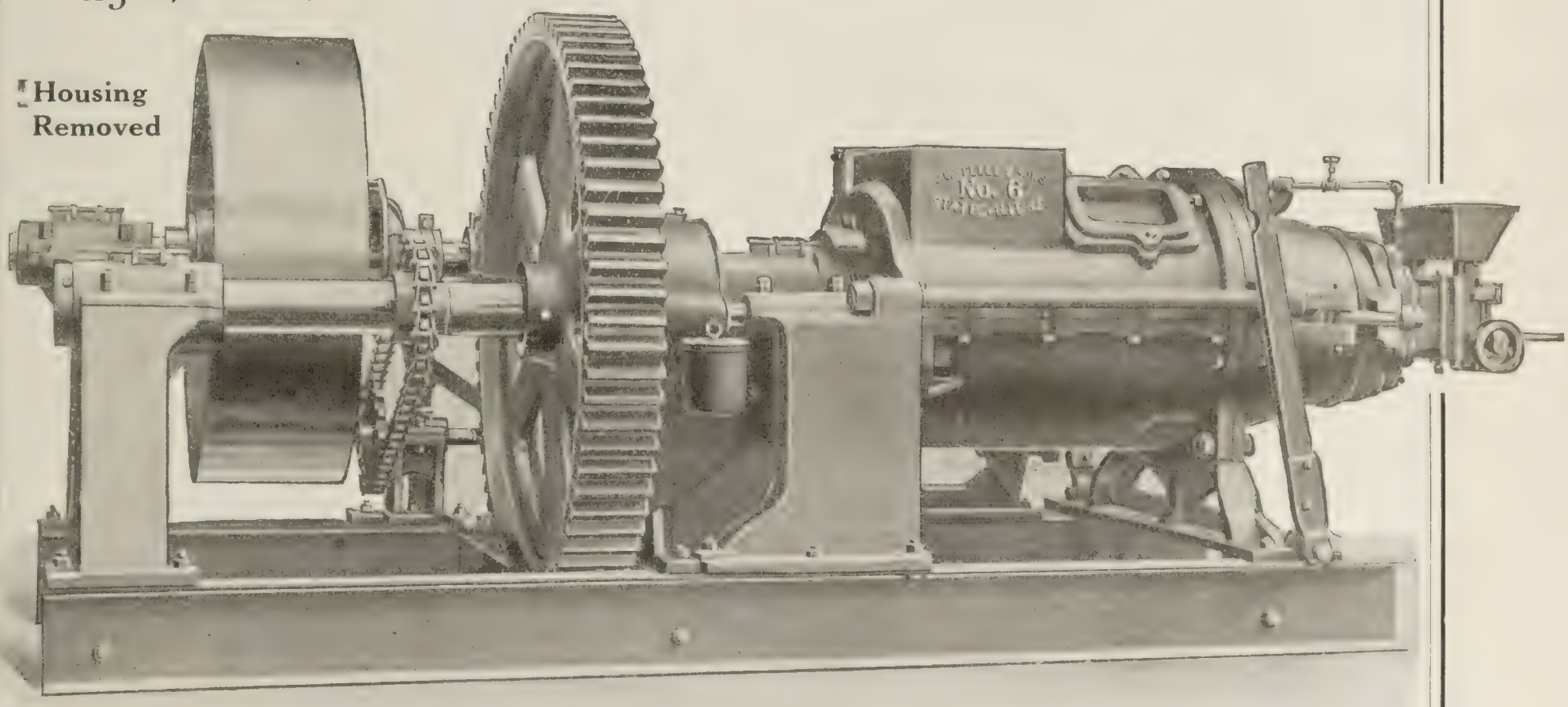
The Steele Clay Machinery

Is the Result of Over Twenty-five Years of Team Work

The combined and continuous effort of our Organization in meeting the complex problems of working a great variety of material, from very short sandy clays to the most obstinate clays and shales, is producing most satisfactory results.

In many cases the superior quality of goods produced by our customers has caused the adoption of our machinery by their competitors.

Experienced service and fair treatment is continually widening our field.



J. C. STEELE & SONS, Statesville, N. C.

GEO. H. SMITH, Kansas City, Mo., Western Agent

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—First-class fire brick salesman for Chicago and vicinity, one who understands the manufacture as well as the selling of same. State experience and salary expected. Address: 5-F, care of "Brick and Clay Record." 5-1.

WANTED—Good, all-around machinist; one who is capable of making all the repairs about brick factories. Address: 5-D, care of "Brick and Clay Record." 5-1.

WANTED—Stationary engineer for brick factory. One who can make repairs. Address: 5-B, care "Brick and Clay Record." 5-1.

SPECIAL OPENING.

WANTED—Party with some money to help experienced brickyard man promote an $80,000 to $90,000 brick plant. Twenty-five acres of the best Ohio red burning shale, 30 ft. thick; 10 ft. of plastic fire clay under the above. Down-draft kilns, 725,000 capacity; three presses for press brick and 100,000 capacity stiff-mud machinery installed this spring. Latest improved waste heat dryer 42,000 capacity. For particulars address: 5-S, care of "Brick and Clay Record." 5-2-P.

OPENING—In Cleveland, one of the greatest, if not the greatest, industrial cities in the world, is an unusual opportunity in a well equipped plant for the manufacturer of a staple article with an increasing demand. To the right man who is capable of systematizing a manufacturing plant we might sell enough stock to double the capacity to increase profits. This concern has no debts; but every dollar is for machinery and working capital. Address: 4-BO, care of "Brick and Clay Record." 4-2-1

WANTED—Gentlemen to invest in a new fire brick plant in the East. Very good fire clay deposit, and in very good market. Address: 4-BX, care of "Brick and Clay Record". 4-2-1

WANTED—POSITIONS.

WANTED—Position on paving brick plant as assistant superintendent or similar position. Want this position where there is a chance to arrive. If you appreciate interest, ability and dependability, I want to get in touch with you. Am a ceramic engineer with two full years at the bottom in face and paving brick. Will furnish references from superintendents that you know. Address: 5-R, care of "Brick and Clay Record." 5-2P.

POSITION WANTED—As foreman or burner. Can burn any kind of kiln. Twelve years' experience in tile and promenade works in England; produce results. Can turn out a new roofing tile. Address: 5-H, care of "Brick and Clay Record." 5-1P.

POSITION WANTED—As salesman in sewer pipe and clay products. Eight years' experience. Can give best reference as to ability, etc. Address: 5-G, care of "Brick and Clay Record." 5-1P.

WANTED—Position as superintendent of brick plant. Experienced in fireclay silica, building and paving brick. Employed, but desire change. Best references. Address: 5-A, care of "Brick and Clay Record." 5-1-P.

EQUIPMENT WANTED.

WANTED—One belt-driven rattler for testing paving brick. Address: 4-BN, care of "Brick and Clay Record". 4-2-1

WANTED—One end-cut hollow brick die; one side-cut die; one side-cut cutting table. State price and full particulars. Thompson Bros., Windsor, Ontario. 5-1.

WANTED—In trade for brick, one good stiff-mud auger machine, capacity 30,000 to 50,000 per day. Address: 5-C, care of "Brick and Clay Record." 5-1.

WANTED—Conical, spiral roll crusher. Must be in good order and cheap, for cash. C. H. Horton Co., Painesville, Ohio. 5-1.

CLAY WANTED

WANTED—Clay that burns red, suitable for manufacturing flower pots. Must be within easy shipping distance of Chicago. Address. Geo. Keller & Son, 2618 Herndon St., Chicago, Ill. 4-1

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—Whole or half interest in one of the best paying brick and tile plants in Washington. This is a new plant, Fate machinery. The farmers have just commenced to use burned clay tile—thousands of acres to be tiled; fine climate. Four-inch tile sold at yard, $25.00. Write and learn more. Address: Star Brick & Tile Plant, Bay View, Wash. 4-2-4

FOR SALE—First-class medium sized plant, suitable for sanitary ware, white ware, or stoneware. Practically good as new; thoroughly equipped. Now in operation. Best built plant in Ohio. Plenty of labor; gas fuel. Shipping facilities the best. Will be sold cheap, if at once. Address: 5-N, care of "Brick and Clay Record." 5-1.

FOR SALE OR LEASE—The best situated brick manufacturing plant in southeastern Kansas: machinery and plant in first-class condition, could be put in operation in 48 hours. Capacity, 60M. On Santa Fe Railroad. Highest quality of shale, natural gas at plant. It you mean business address: Secretary, Kansas Vitrified Brick Co., Chanute, Kansas. 5-2.

BANKRUPT SALE—A 5-kiln modern brick plant at Ranson, near Charles Town, Jefferson County, W. Va., with 15 acres of land. This property will be offered for sale at auction within the next 60 days. Watch for large advertisement later. H. V. Sheetz, Trustee, Charles- 4-2-1

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Complete mud brick plant, whole or in part, good engine, boiler, clay machinery, 30,000 pallets, etc. Very cheap if sold soon. Ilias Walter, Upper Sandusky, O. 5-3P.

FOR SALE—Best clay proposition in state. Schist and good clay in abundance. Address: X, 20 Clark Bldg., Columbia, S. C. 5-1P.

FOR SALE—Brick and tile factory; 10 acres of land, brick building, Fate machinery. Bente and Wilson, Sedalia, Mo. 5-2-P.

FOR SALE—Small, well equipped tile plant in good condition. Fine location. Address: J. M. Duffield, Mich. 7-2-TF

FOR SALE—A brick and tile plant at Ullin, Illinois, very cheap. Z. P. Willis, Mt. Vernon, Ind. 5-1-P.

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE—40,000 standard size wooden pallets. William A. Hausman, Allentown, Pa. 4-2-2P.

FOR SALE—All kinds of Clayworking Machinery, bargains in used engines, boilers, motors, brick and tile machines, dry pans, pug mills, cutting tables, anything you want. Two good fully equipped plants for sale. CLAYWORKERS EXCHANGE, Farmers Bank Bldg., Springfield, Ill. 5-tf.

BARGAIN LIST OF SECOND HAND MACHINERY.

Repaired and Ready for Shipment.

1—150 H. P. Non-Condensing Steam Engine.
2—6 H. P. Upright A B Fan Engines.
15—12 to 15 H. P. Various makes, slide valve steam engines.
10—15 to 35 H. P. Various makes, Gas Engines.
1—54" x 16' Atlas Boiler.
2—36 x 15 A B Ventilating Fans.
1—24 x 12 Pressure Blower.
1—No. 7 Sturtevant Blower.
2—C & A Potts Soft-Mud Brick Machine.
1—Ross-Keller 4 Mould Dry Press Brick Machine.
1—Penfield 6 Mould Dry Press Brick Machine.
1—Raymond Automatic Cutter.
1—Hummer Jr. Fate Brick and Tile Machine, with full set of building block dies.
1—100 M Arbuckle Horizontal Pug Mill.
1—100 M Michigan Horizontal Pug Mill.
2—Second hand Rust Clay Feeders.
1—20 M Kells Brick Machine and cutter.
1—C. & A. Potts Disintegrator, good condition.
1—Bechtels Automatic Side Cutter.

New Machinery at Special Prices.

1—100 M Stiff-Mud Brick Machine.
1— 30 M Stiff-Mud Brick Machine.
1— 20 M Stiff-Mud Brick Machine.
3—25 M Disintegrators.
1— 50 M Disintegrator.
1—100 M Disintegrator.
400—New Brick & Tile Barrows.
10—New Spring Trucks, Complete.
2—Bechtels Automatic End Brick Cutters.
4—Iron Frame Winding Drums.
4—Wood Frame Winding Drums.
3—10' Clay Elevators.

Above machinery offered subject to prior sale at reduced prices.

MARION MACHINE FOUNDRY & SUPPLY CO.
P. O. Box 395. Marion, Indiana.

FOR SALE—One Andrus 4-mold dry press machine that has made only 400,000 brick—practically new. $1,200.00 on car, Memphis. One 5-mold (can be changed to six) Hercules soft-mud machine. One 6-mold Hercules soft-mud machine. Overhauled and in good condition. $250 each on cars, Memphis. One No. 0 late model Thew steam shovel that has been worked about six months and in good condition; $2,300.00 on cars, Memphis. Address: South Memphis Brick Co., Memphis, Tenn. 3-2-TF.

FOR SALE—Practically new, one 40 h.p. and one 60 h.p. high pressure boiler, 100 h.p. slide valve engine, 9 ft. American dry pan, automatic feeder, clay elevator, 8 ft. pugmill, No. 88 Brewer brick and tile machine, Fayets end cutting table, Brewer tile cutting table (10 and 12 inch), board delivery side cutting table, 6-track Standard steam dryer, 102 cars, centrifugal pump with gasoline engine attached, Pulsometer steam pump. W. E. Lyon & Co., Carthage, Ill.

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—One No. 0 Thew automatic steam shovel, 126 double deck dry cars, one American rotary clay dryer. Address: Box 33, Muncie, Ind. 5-1.

Brick and Clay Record Classified Ads Are Result Producers

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and ironworking machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

FOR SALE—No. 1 Union brick machine and No. 16 rotary cutter made by E. M. Freese & Co., Galion, O.; replaced with larger capacity of same make. Good for 40,000 brick per day. Price right to move quick. Address: Richlands Brick Corporation, Richlands, Va. 4-3.

FOR SALE—Berg 4-mold dry press. A1 condition, made only 500,000 brick. Also ten special wheel trucks, and new set dies and liners. Price right for quick sale. Address: Richlands Brick Corporation, Richlands, Va. 4-3.

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Vogan, Franklin, Pa. 4-TF

BUILDING AND REPAIRING KILNS

FOR SALE—A special lot of hand-made and hand-pressed 9 inch and 13½ inch Key fire brick made from weathered (Carter County, Ky.) flint clays. Ideal brick for building new kilns, bag walls and making repairs. Must move to make room for improvements and will sell cheap. Ashland Fire Brick Co., Ashland, Ky. 5-2.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.
M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

WANTED—MISCELLANEOUS

WANTED—To hear from owner of good brick and tile plant for sale. State price. D. F. Bush, Minneapolis, Minn. 5-1-P.

RAILS

SMALL ORDERS GIVEN SPECIAL ATTENTION

40, 56, 60, 70, 75, 80, 85 & 90 lb.

RELAYING RAILS
FOR SIDINGS, SPURS, ETC.

8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.

NEW STEEL RAILS
FROGS AND SWITCHES

SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment

RICHARDSON & CO., INC.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick
BELDEN BRICK CO.,-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

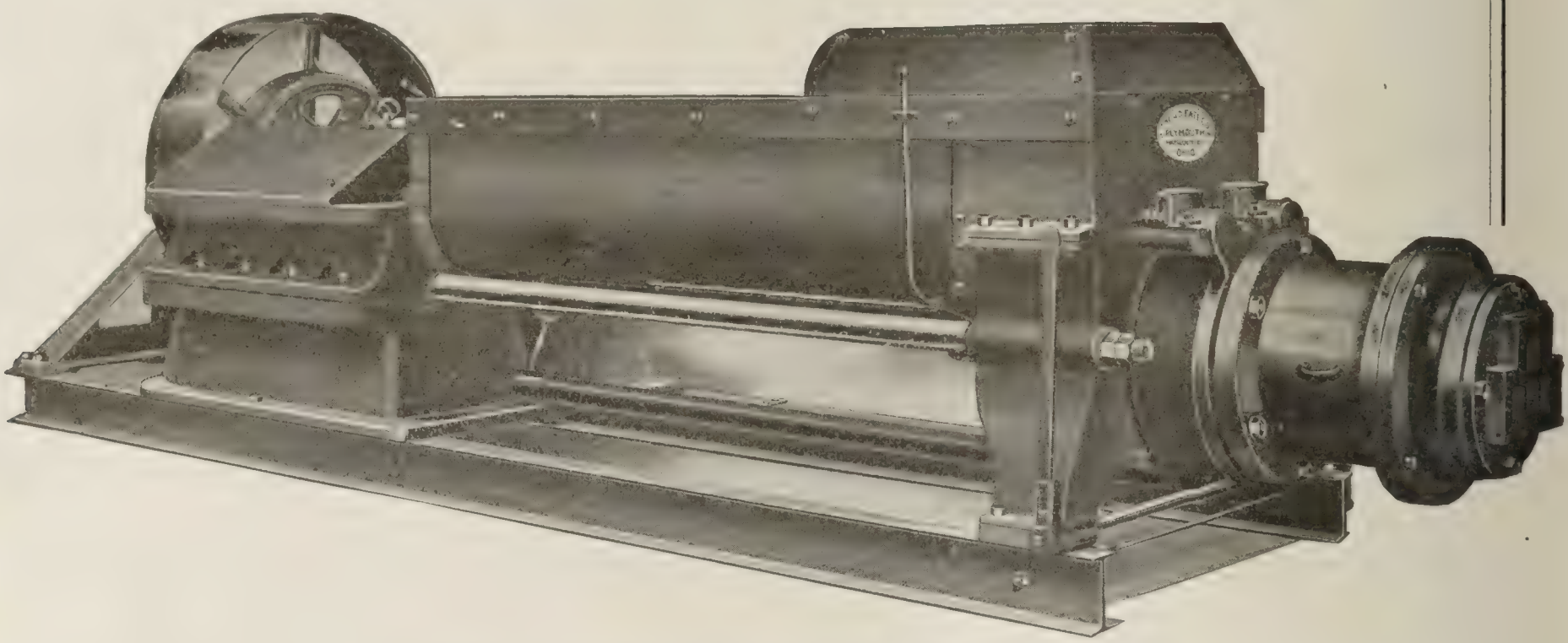
Send your orders to

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geljsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

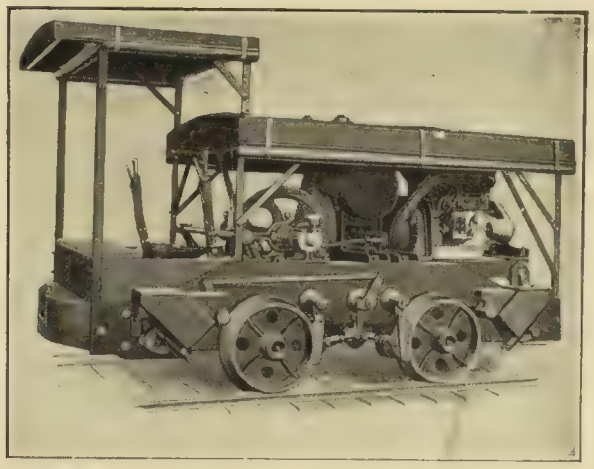
The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.





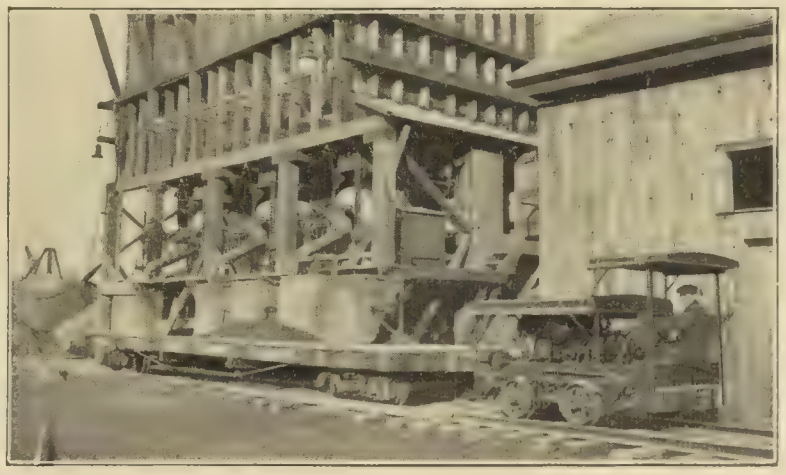


Plymouth Gasoline
Industrial Locomotives

Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.





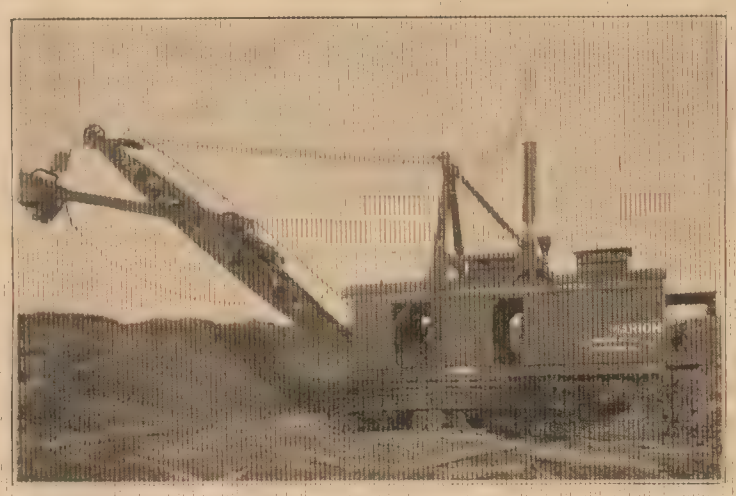
The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight-year-old boy who runs one.

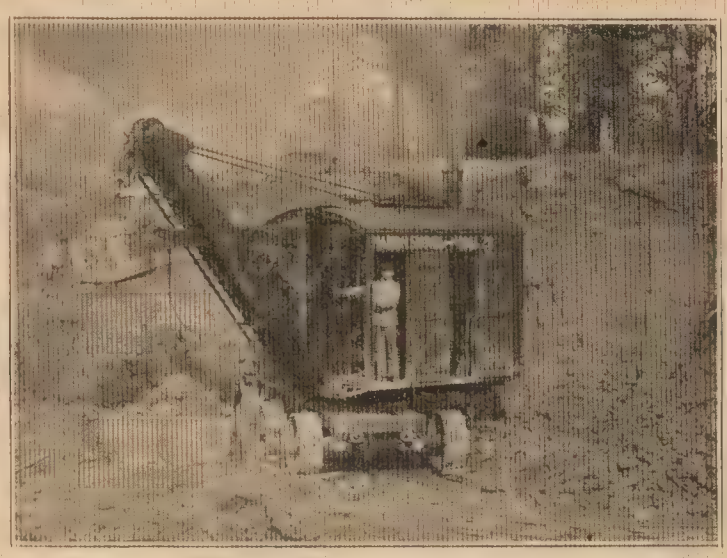
The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative

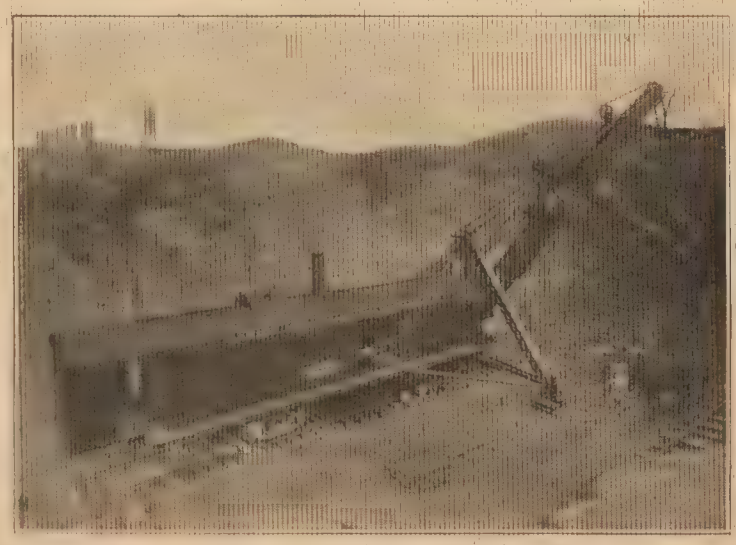
In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

666.05
C

BRICK and CLAY RECORD

THE THEW SHOVELS

THE THEW GASOLINE SHOVEL A DEMONSTRATED SUCCESS



No fireman necessary—strictly a one-man shovel.

No licensed engineer required. No state or local boiler rules to be observed.

FUEL COST PER HOUR—TWO GALLONS GASOLINE—20 to 30 CENTS.

No expense for hauling coal. No extra time getting up steam or banking fires. No difficulty about water supply. No freezing in winter.

No boiler insurance, no boiler injector troubles, no expenses for boiler maintenance.

THE OWNER OF A THEW GASOLINE SHOVEL WRITES:

"The Thew gasoline shovel outclasses steam two to one. A green operator loaded one hundred and ninety-five two-yard wagons in nine hours, good hard digging on a six per cent grade, loading in the rear and waiting for teams at least ten per cent of the time. I think it the coming shovel."

A *Standard THEW* Shovel equipped with a *Standard* Gasoline Engine

Write us for information.

THE THEW AUTOMATIC SHOVEL CO. LORAIN OHIO

Vol. XLVI, No. 10 Chicago May 18, 1915

It makes no difference

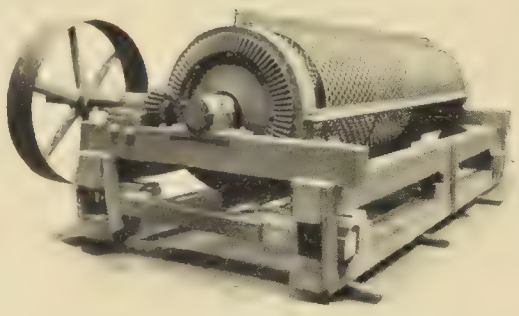
whether you want to screen your material, elevate, store or convey it or transmit power to various units

When you want any such equipment, there is just one place to send your orders and more Brick and Clay Workers are finding this out every day.

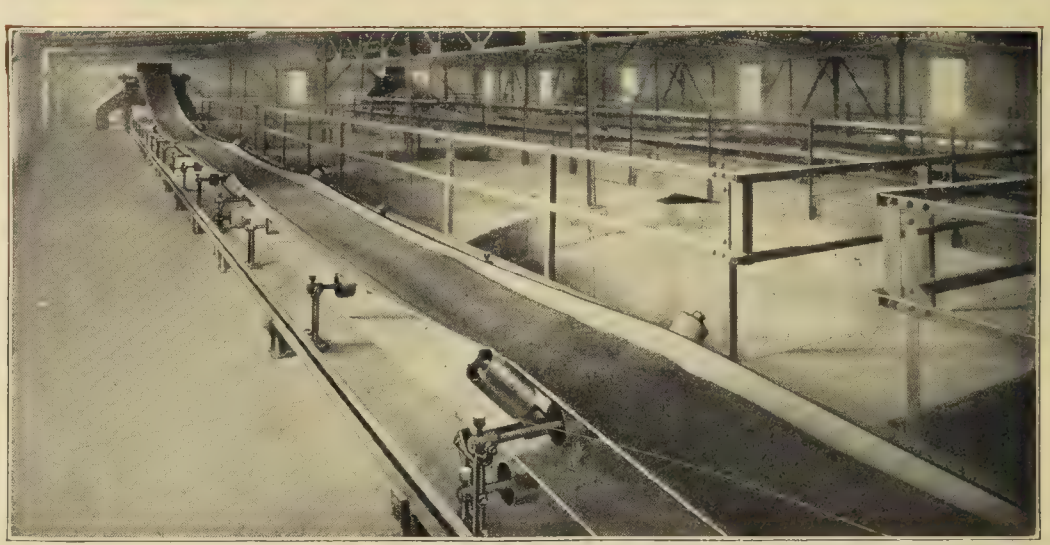
You may fool them once but when they keep sending repeat orders it proves that you are treating them right.

SPECIFY WELLER-MADE INSIST ON

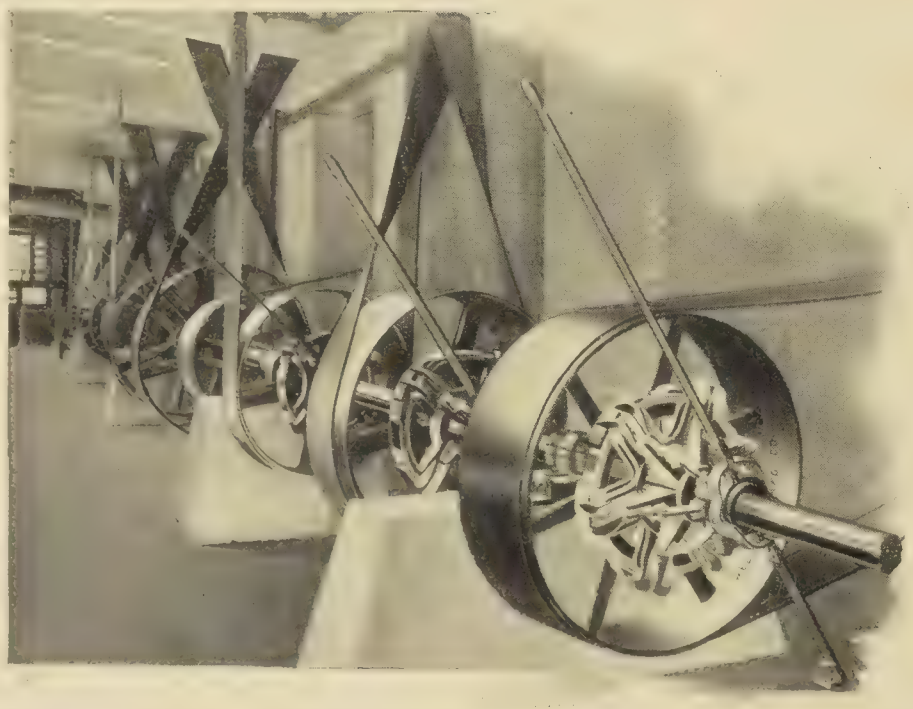
Screens
Open or Encased



Revolving, Shaking or Stationary.



Belt Conveyors—Storage System.



Line Shaft Equipment. Every pulley fitted with Friction Clutch.



Elevators. Any Material—Any Size.

Elevating, Conveying and Power Transmission

Weller Manufacturing Company, Chicago

NEW YORK	BALTIMORE	AKRON	ST. LOUIS	DALLAS	SAN FRANCISCO
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Exchange	711 Main St.	316 Rialto Bldg.

TRAUTWEIN-IZE

YOUR PLANT AND MAKE IT GIVE YOU INCREASED EARNINGS

Trautwein DRYERS

TRAUTWEIN DRYING APPARATUS is built to meet requirements, not a price. It is the most economical, durable and efficient of any equipment used.

TRAUTWEIN DRYING SYSTEMS are the result of years of practical drying experience.

TRAUTWEIN METHODS are not experiments.

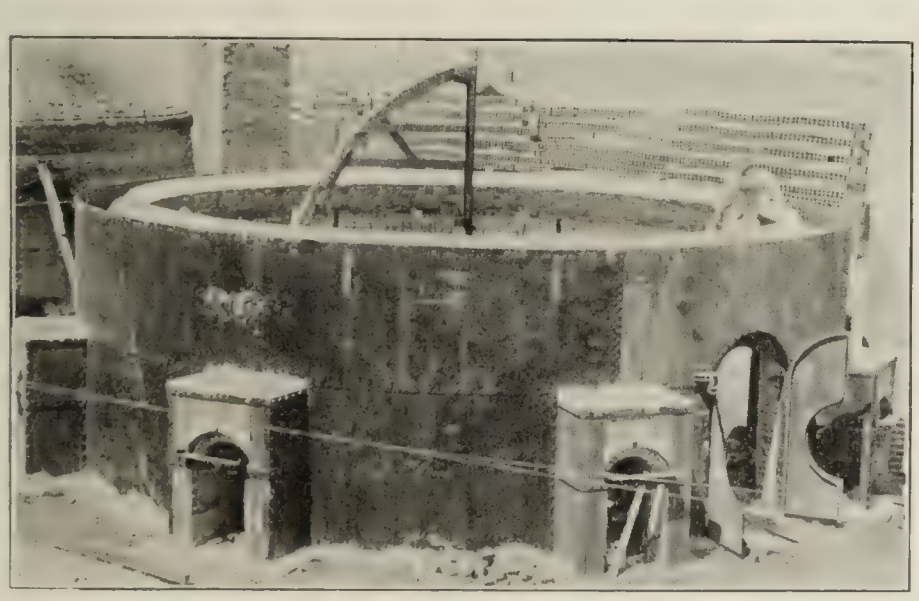
Trautwein DRYERS

It will pay you to correspond with us.

Trautwein Dryer & Engineering Co.

Manufacturers and Engineers

417 South Dearborn St. CHICAGO



Smith Steel Shell Kiln

Lasting Qualities

Note this—From a Prominent Clayworker—

"We have used a Steel Shell on a kiln for the last fifteen years and are now using it on a new kiln built this season.

"It is in good condition, good for fifteen years longer, and we like it very much."

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Alliance Brick Co..... 8
Alliance Clay Pro. Co..P- 5
Alsey Brick & Tile Co..P- 4
Alton Brick Co.....P- 4
American Blower..... 935
American Clay & Cement Corp. .....P- 6
American Enameled Brick & Tile Co.....P- 8
American Process Co... 999
Ambursen Co.....1010
Atlas Car & Mfg. Co... 981

Baird Machine & Mfg. Co. 980
Baldwin Locomotive Wrks. .....Back Cover
Ball Engine Co. (Erie Steam Shovels)..... 986
Barr Clay Co.....P- 4
Belden Brick Co.....P- 7
Big Four Clay Co.....P- 6
Bessemer Limestone Co.P- 5
Bradford Pressed Bk. Co.P- 7
Bonner & Marshall.....P- 7
Brighton Fire Brick Co..P- 3
Broderick & Bascom... 971
Brown Instrument Co... 973
Bruce-Macbeth Eng. Co. 972
Buckeye Rolling Mill Co. 971

Canton Grate Co..... 983
Carlyle Paving Bk. Co..P- 6
Ceramic Sup. & Cons.. 984
Chambers Bros. Co.... 933
Chase Fdry. & Mfg. Co.1009
Chicago Brick M. Co... 988
Chicago Retort & Fire Brick Co.....P- 3
Childs, O. J., Co..... 984
Cincinnati Frog & Switch Co. 972
Classified Ads 1015-1016
Clearfield Machine Shops 970
Cleveland Alloys Co.... 978
Clinton Paving Bk. Co...P- 5

Davenport Loco. Wks.. 974
Danville Brick Co.....P- 6
Davis Fire Brick Co....P- 3
Deavitt, H. M. 970
Deckman-Duty Brick Co.P- 5
Detroit & Cleveland Navigation Co. 979
Dewey Bros. 970
Dover Fire Brick Co....P- 3

Eagle Iron Works..... 976
Eastern Machy. Co.....1017
Englehard, Chas..... 974
Estes, Inc., L. V..... 990
Evans Clay Co.....P- 3

Gandy Belting Co..... 991
General Traffic Assoc... 970
Gerlock, H. W..... 970
Globe Brick Co.....P- 8
"Gripwell" Pulley Covering Co. 973

Hamburg Vit. Bk. Co...P- 6
Hardinge Bros., Inc.... 976
Harris Brick Co.....P- 5
Hendrick Mfg. Co..... 973
Hinde & Dauch Paper Co.975
Hocking Valley Bk. Co..P- 6
Hocking Valley Pro. Co.P- 7
Hook Patent Kiln Co... 987
Hydraulic-Press Brick Co.P- 8

Our "Front Cover" Advertisers

We believe we are safe in saying that 100 per cent of the readers of "Brick and Clay Record" have a keen recollection of every advertisement that has appeared on the front cover of this magazine, since we started printing these advertisements with the first January number of Nineteen Fifteen.

Considerable thought has been given to the attractiveness of these front cover "ads.," and this thought has not been altogether unselfish. We want our front cover to look right. We try not to sacrifice its appearance to the effectiveness of the advertisement, but rather to make the advertisement effective by making it blend into the cover design.

A large number of mechanical processes have come under our observation whereby these advertisements may be made more and more artistic, and, at the same time, lose none of their force. The results of this observation have been, are, and will be shown in our front cover "ads."

These front cover "ads." give our advertisers an opportunity of presenting their story in a forcible and progressive way to our readers. We would be glad to know what our readers think of the form these front cover "ads." have taken—even glad to know which of them have made the strongest appeal to their minds.

May we hear from you, and have the benefit of your criticism?

The letter "P" preceding a number refers to the "Pink Section"

Ironclay Brick Co..... 7

Jackson & Church Co.. 973

Keller Brick Co.....P- 8
Kimbell, S. S., Brick Co.P- 8
Kissel Motor Car Co.... 989

Lehigh Portland Cement. 982
Link-Belt Co. 976

Mail-Order Co..... 976
Main Belting Co..... 931
Manufacturers Eq. Co.. 993
Marion M. Fdry. & S. Co. 978
Marion-Osgood Co..... 999
Marion Steam Shovel Co.1014
Marsh-Capron Mfg. Co.. 971
Martin Grate Co..... 992
Martinique Hotel..... 977
Mathews Gravity Carrier.1011
Maurer & Son, Henry...P- 3
Mayer Brick Co., C. P..P- 4
McArthur Brick Co.....P- 8
Mexico Bk. & F. Clay Co.P- 4
Metropolitan Pav. Bk. Co.P- 5
Mowrystown B. & T. Co. 985
Murphysboro Pav. Bk. Co.P- 4
Murray Iron Wks. Co... 975

N. P. B. M. A.....1000
National Dry Kiln Co... 995
National Roofing Tile Co.P- 7

Ohio Gal. & Mfg. Co... 999
Ohio Kiln Co..... 981

Pettigrew Foundry Co.. 972
Pittsburgh Tile Mfg. Co.P- 7
Price Electric Co..... 972
Purington Pav. Bk. Co..P- 6

Quinn, John .....P- 6

Read & Day..... 975
Roessler & Hasslacher.. 985

S. A. F. E..... 934
Sawyer Belting Co.....1011
Scandinavia Belting Co.. 936
Schaffer Eng. & Eq. Co.1009
Schofield-Burkett Cons..1012
Schultz & Son, A. L.... 983
Shawmut Paving Bk. Co.P- 6
Smith Co., Claude..... 929
Smith, W. W.....1012
Soisson Fire Bk. Co....P- 3
Southern Fire B. & C. Co.P- 4
Standard Dry Kiln Co.. 997
Stark Brick Co.....P- 8
Sterling Brick Co.....P- 4
Stevenson & Co..... 994
Stupakoff Laboratories.. 971

Taylor Instrument Companies 975
Terre Haute Vit. Bk. Co.P- 5
Thew Auto. Shovel Co.. .....Front Cover
Thwing Instrument Co.. 982
Toronto Fdry. & Mach. Co. 979
Trautwein Dryer & Engineering Co. 929

United Brick Co.....P- 5

Webb Wire Works..... 974
Weller Mfg. Co..... 928
Westinghouse El. & Mfg.1013
Woodhouse Chain Wks. 977

Zook, G. W..... 974



These eight 18-in. LEVIATHAN Belts driving pans from the same shaft are of a group of twelve which has seen active service, in one of the Country's largest Clay Plants, ever since installation was made in 1910. This photograph was taken in February, 1914, and the belts do not show a trace of wear today.

The above isn't interesting to LEVIATHAN Belt users, for it is similar to the story that they know so well.

If you happen to represent one of those few prosperous Clay Plants that have never seen the light of the LEVIATHAN, Opportunity to enable you to do your Company a substantial good is knocking at your door.

We will protect you in your recommendation by a guarantee of a longer and better service at a lesser cost.

MAIN BELTING COMPANY

Manufacturers and Engineers

Philadelphia New York Chicago
Pittsburgh Seattle Birmingham

Main Belting Co., of Canada, Ltd.
Montreal Toronto

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson) $1.20

Brick Drying (English Edition) $1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth) $3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell) $3.00

Clays: Their Occurrence, Properties and Uses (Ries) $5.00

Clay Glazes and Enamels (Griffen) $5.00

Clays, Tables of Analyses (Crossley) $2.00

Clayworker's Handbook (Searle) $2.00

Economies in Brickyard Construction and Operation (Lovejoy) $1.00

Effect of Heat Upon Clays (Bleininger) $2.00

Engines and Boilers (Watson) $1.00

Engineering for Land Drainage (Elliott) $2.00

Estimating and Contracting (Radford) $2.00

Garage and Motor Boat Houses $2.00

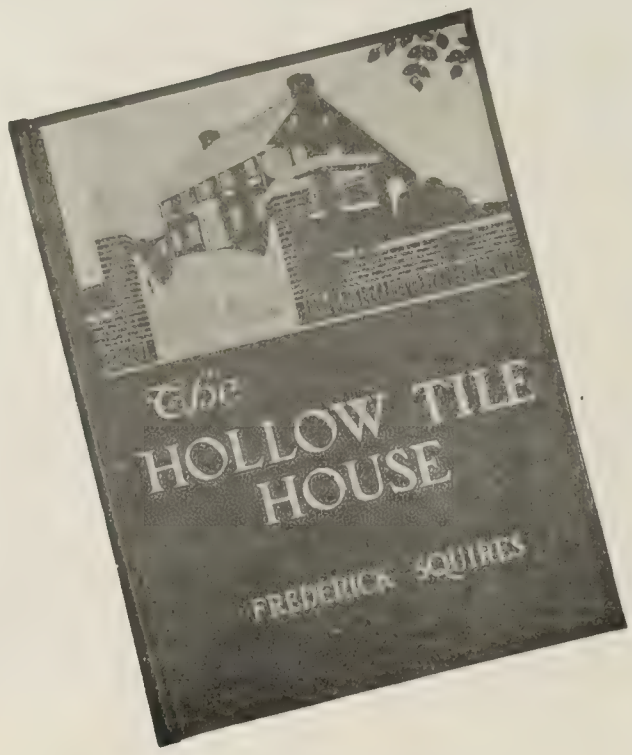
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work $1.50

Hollow Tile House (Squiers) $2.50

How to Analyze Clay (Ashby) $1.00

How to Read Plans (Radford) 50c



210 Pages, 7 1-2x10 inches. 125 Illus.
$2.50 postpaid

A BOOK wherein the reader is introduced to hollow-tile in the making, is told how it is wrought into houses, and is shown how these houses look and from what foreign ancestry their appearance is an heritage.

The book says the last word on the construction of the fireproof home, the most modern development of wall construction in "Texture-Tile," and the most recently devised systems of fireproof wall and floor construction.

Any book on this list will be sent postpaid on receipt of price. No book will be sent out on approval.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester) 75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe) .$1.50

Modern Brickmaking (Searle) $5.00

New Competition (Eddy) $1.50

Notes on Pottery Clays (Fairie) $1.50

Observations on Pottery (Beckwith) 60c

One Hundred Bungalows (BBA) 50c

Pottery (Geo. J. Cox) .$1.25

Practical Brick and Tile Book (Dobson-Hammond) ...$2.40

Practical Farm Drainage (Elliott) $1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill) $2.50

Producer Gas and Gas Producers (Wyer) $4.00

Producer Gas Fired Furnaces (Nagel) $2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard) $4.00

Scumming and Efflorescence (Lovejoy) 50c

Seger's Collected Works (Condensed) $3.50

Sewage Disposal Works: Their Design and Construction (Easdale) $4.00

Sewage Disposal (Fuller) $6.00

Sewers and Drains (Marston) $1.00

Sewer Pipe and How to Make It (Vogt-Turner) 25c

Smoke Prevention and Fuel Economy (Booth) $2.50

Vitrified Paving Brick (Wheeler) $2.00

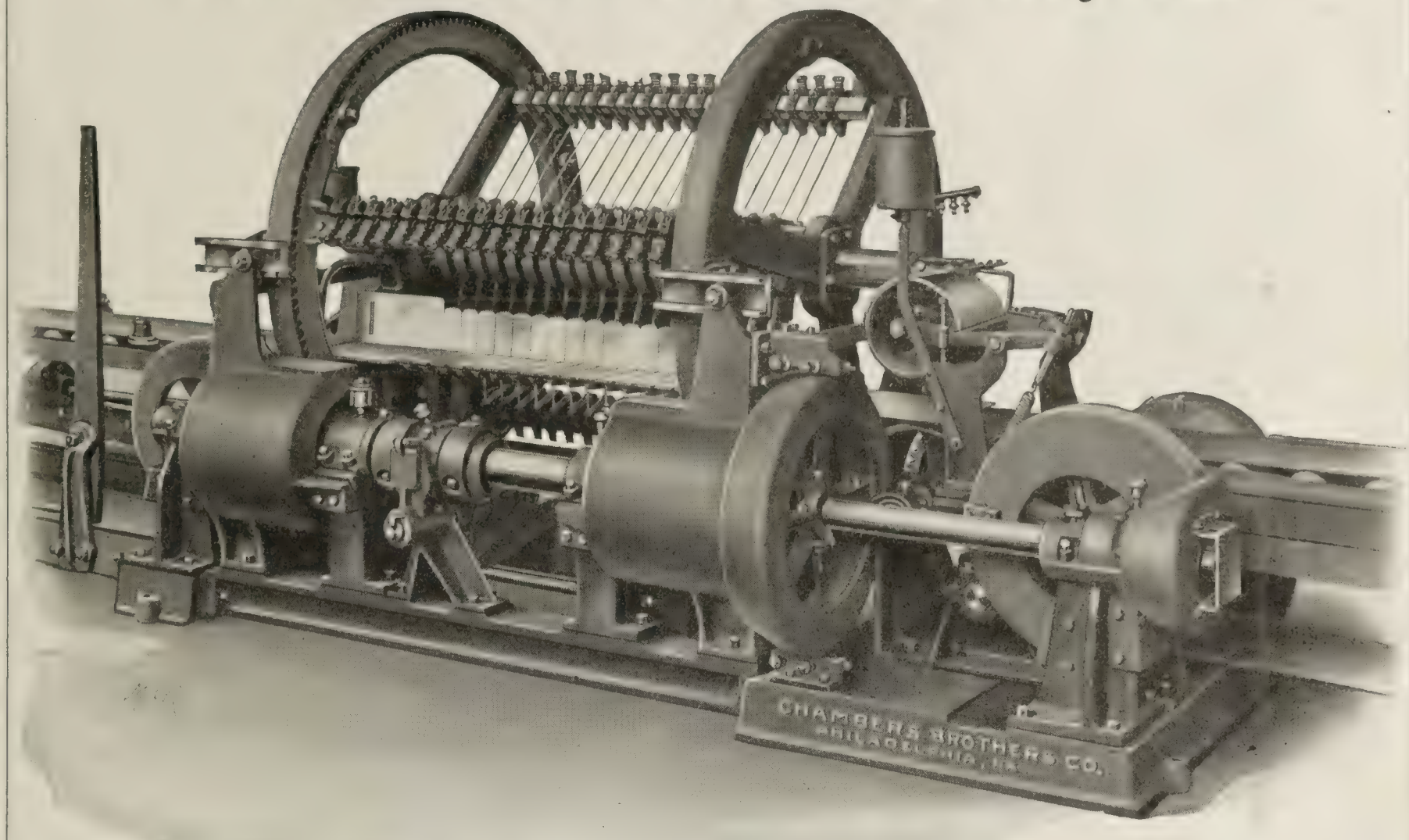
Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

New Multiple Brick Cutter

That Does Not Swell the Clay Bar



Automatic Side Cutter No. 10, Built by

Chambers Brothers Co., Philadelphia, Pa.

A frictional driven Cutter for Brick or Block that starts promptly and stops at completion of its stroke without noise or shock.

Entirely free from knocker clutches or similar throw out devices.

Driven through an enclosed cone friction of ample diameter and so arranged that the slight lateral movement employed to disengage the friction members upon completion of a cutting strike applies a brake to the entire periphery of the floating member. The result is highly satisfactory.

All revolving parts of the cutting mechanism, together with the platen, are suspended from a stationary steel shaft, the reel hub being upon roller bearings. There is no running machinery beneath the platen, no track or wheels for the support of a carriage, and no parts into which chips can be thrown by the cutting wires. Pressure by one finger will move the cutter endways in either direction.

Observe the enclosure of all gears, not only for their protection, but as safe-guarding against accidents.

Speed-regulating features meet the requirements of machine output and of tender clays. Adjustments to meet various conditions are made without stopping the machine, and are absolutely within control. The underside of clay bar is lubricated by a new method, using only so much lubricant as is required. No slop and no needless waste. A strong, durable, well-built Cutter.

Take a Tip from Billy Sunday

Billy don't try to drive people into Heaven over the Methodist road, the Baptist pike or the Catholic highway. He tells 'em to get there by any route they choose, just so they get there.

Billy believes in saving souls, not in making Presbyterians, or Universalists or Episcopalians.

That is the S-A-F-E method of making Fire-Safe converts.

It is not a question of selling brick, or tile, or stone, or cement. It is simply a matter of building SAFE.

There is a place for every good fire resisting material. We don't try to cram any one kind of stuff down a man's throat, but we try to show him that he can't afford to "build to burn."

Nothing ever has been accomplished by the old one-horse method. Hook up all the good, safe materials together and it makes a pulling power that cannot fail.

That's the S-A-F-E way. Get the combination to THE SAFE—there is money in it for you.

THE SAFE
SOCIETY ADVOCATING FIRE ELIMINATION

R. P. STODDARD, Secretary
356 Leader-News Bldg.
CLEVELAND



No. 14 Sirocco Multi-Blade Waste Heat Fan operating in the plant of the Ashland Fire Brick Co., Ashland, Ky.



Brick Kilns at the plant of the Ashland Fire Brick Co., from which the Sirocco Fan draws the waste heat for drying fire brick.

Sirocco

TRADE MARK.

Waste Heat Fan System for Brick Plants

Economy of Operation

"Sirocco" Fans have cut down the manufacturing cost of brick for scores of brick and clay plants.

"Sirocco" saves money on brick drying *because* the Sirocco design is *right*—handles enormous volumes of air compared to the power costs.

Built strong to hold up under strenuous working conditions.

Any fan will handle some air—but "Sirocco" handles the most at the least expense. Further than the efficiency of the "Sirocco" Fan our Engineering Department will thoroughly investigate your drying problem and advise the *size and arrangement best suited to your individual needs.*

Reliability of Service

It is one thing to buy a fan, but it is another thing to buy a fan which will withstand the *every-day* working strains and *still be efficient.* That is the character which has sold and kept sold "Sirocco" Fans.

"Sirocco" Fans are built for *service—long service* and to give *good service* and they're *doing it.*

Your product must be properly dried before it goes into the burning kilns and to do this you not only need *heat* in the dryer but heat properly mixed with outside air and a ventilation which will preserve the texture of your brick.

Our Brick Engineering Department will lay out a "Sirocco" System for you and give you all details regarding it. Send us a sketch indicating the location of the burning kilns and buildings, we'll do the rest.

AMERICAN BLOWER COMPANY

DETROIT, MICHIGAN, U.S.A.

BRANCH OFFICES

New York, 141 Broadway
Rochester, Insurance Bldg.
Philadelphia, 605 Hale Bldg.
Pittsburgh, Empire Bldg.
Chicago, Marquette Bldg.
St. Louis, Title Guaranty Bldg.
Atlanta, Empire Bldg.
Kansas City, R. A. Long Bldg.
Seattle, 538 Central Bldg.
San Francisco, Cal., 667 Mission St.
Dallas, Texas, South Western Life Ins. Bldg.
Los Angeles, Central Bldg.
Montreal, Que., Can., 301 McGill Bldg.
Indianapolis, 1462 Lempke Annex
Boston, Mass., 120 Milk St.

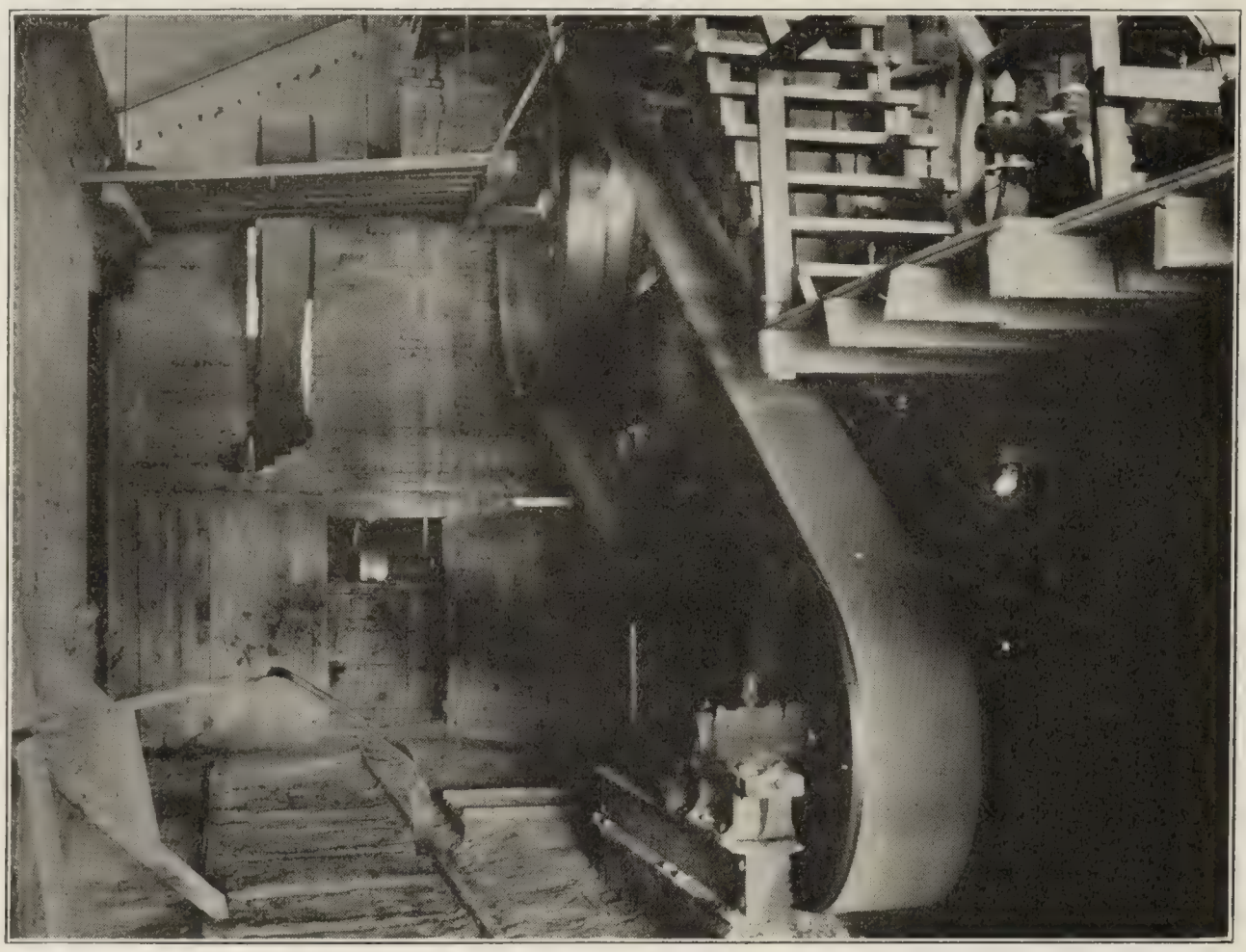
"SCANDINAVIA" SOLID WOVEN COTTON BELTING

The Belt for the Brick and Clay Plants

ILLUSTRATION SHOWS:

52 feet of 12-inch "SCANDINAVIA" used on a brick machine in one of the largest brick plants in Ohio. "SCANDINAVIA" has been in operation $2\frac{1}{2}$ years—the best service ever received from stitched canvas was 1 year.

Space does not allow us to enumerate many such instances.



Why "SCANDINAVIA" is better—

Has no plies—no stitches—no laps—better gripping power—drives more horsepower—has greater strength—is absolutely uniform—not affected by steam, water, oil or dust. Most economical, considering service.

Note: In same plant above mentioned, "SCANDINAVIA" working on a dry pan drive has been in service 4 years—whereas rubber lasted but $1\frac{1}{2}$ years.

Write our nearest Branch.

SCANDINAVIA BELTING COMPANY

106-108 Reade Street, NEW YORK

Atlanta Boston Buffalo Chicago Cleveland Easton, Pa. Pittsburgh Los Angeles San Fancisco Portland, Ore.

CANADA — FEDERAL ENGINEERING CO., LTD. — TORONTO — MONTREAL

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

-:-

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

-:-

Cable Address Kenleaco, Chicago

-:-

Telephone Harrison 951

Chicago, May 18, 1915

Vol. XLVI No. 10

Table of Contents

Be Your Own Safety Man.....956

Buying Face Brick.....945

Chicago—America's Summer Resort.....940

High School Girls Win Advertising Contest.....948

New Detonating Device.....958

New Use for Clay Block.....953

Wartime in Hungary.....951

The Editor's Corner.....938

Freight Tariffs and Troubles.....967

Letter Box.....966

Machinery and Equipment.....968

Pottery Notes.....987

Questions and Answers.....962

Semi-Monthly Trade Review.....973

The Superintendent.....964

Wake of the News.....975

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

-:-

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

-:-

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

-:-

Single Copies, 20c

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

DESPITE THE UNDENIABLE fact that there is a war in Europe and a Japanese invasion in China, despite the fact that Italy is still "on the verge" and Portugal rebellious, despite the wave of indignation that is sweeping our own beloved country at the unnecessary killing of American citizens in the war zone, spring has come—and practically on time.

The home-builder is laying his foundation. The farmer is planting his corn. "Clean Up Week" has transformed many an urban and suburban neighborhood from a dingy settlement into an orderly, well groomed locality, glistening in a coat of new paint.

In thousands of front- and back-yards, the newly turned earth, with its little sail-like paper signs denoting what the planter fondly hopes will spring and bud and bloom as a result of his floraculture, denotes the confidence we still have in the seed-catalog and what it offers for sale. Spring has come, and with it, the hope that "springs eternal in the human breast."

We, too, are planting. The ideas of a better service, of a stronger interest, of the winning of a more generous support, even, than the warm sympathy, the hearty co-operation, the splendid assistance that has come to us, all during the past year.

Some of the signs of an earlier planting are seen in the pages of this issue of "Brick and Clay Record." This is what we like to call our "Human Interest" number. With a few exceptions, the heavier and more technical articles have been omitted. Little is said of what can be done. More space is devoted to what people are doing.

In this garden of thoughts, we are laboring with the spade of what we hope is careful management, the rake of well chosen illustration and the watering-pot of intense desire for improvement.

You, our readers, who are like neighbors looking over the fence, can give us the benefit of your kindly advice.

Our planting is done, that you may, with us, enjoy the harvest. And your share in that harvest will be in proportion to the helpfulness of the advice that you can, and, we hope, will give us.

The readers of a magazine are more important than the men who prepare its pages. If it is to serve them, it must reflect their thoughts. Its function is to follow, rather than to lead. Where it guides, it outlines a path that is pointed out by another—by many others. As a molder of opinion, it gives voice only to some thought expressed by one mind —or many minds—that would fail in reaching the myriad minds of others, were it not for the printed pages offered by this, the clay-workers' own journal.

Lean on our fence, therefore, and point out the faults of our gardening, or, if the thought be with you, strengthen our purpose by telling us where we are right. If the seeds we are planting are those of thistles, let us know it before we—and you—reap a crop of nettles.

Clean Up Week

Speaking of "Clean Up Week" —has it ever occurred to our friends in the brickmaking industry what a grand little idea this was, for the manufacturers of paint? And at the same time, did it ever occur to men who sell common- and face-brick, as well as those who sell hollow clay building tile, what a talking point they had, in connection with this clean-up movement, to impress the fact that repainting and repairing is caused,

The Editor's Corner

mainly, by the inevitable decay of wood, when wood is exposed to the elements.

It has been said that the painter and the carpenter have much more in common than the painter and the bricklayer. When the carpenter completes his contract, he leaves a "fat" job for the painter. The bricklayer is not nearly so generous to the man who follows him.

A few "comparative costs" based on the amount necessary to make the frame houses in your neighborhood presentable, and to insure them against a still more disreputable appearance, next spring, shown as against the meagre amount of work given by the window frames and doors in brick houses, will go a long way toward proving the contention that it is more economical to build with brick, than to present a great expanse of wooden siding or shingles to the four winds of Heaven.

As the Twig Is Bent

The article which appears on another page of this issue, describing a "contest" held by the Decatur (Ill.) Brick Manufacturing Company, is commended to the attention of every manufacturer of burned clay that reads "Brick and Clay Record." It shows a constructive spirit that is worthy of emulation.

We who preach "Build with Brick" should **build for brick** and our best field is in the minds of those who will build, with one material or another, in the years to come. We reap, tomorrow, the rewards of the work we do today. We will sell our material, next year, to those whose minds were turned toward it, this, or last year.

Women are the home-makers of the Nation. In the new order of things, they may be the home-builders, as well. It was fitting, therefore, that the Decatur Brick Manufacturing Company's contest was won by two of the girl pupils in the Decatur High School.

The report shows that forty contestants turned in manuscripts, in which they had written the impressions that had come to them from a careful study of the merits of brick construction. There is but little doubt that as many more took preliminary steps, but stopped short of the actual preparation of contesting essays.

What better way could there be of making an indelible impression on the coming builders of a better-, safer-, saner-built Decatur than the city we see today, that bears the name of that brave naval officer of the Revolution?

Are You a Real Salesman?

Every man who has had occasion to visit a haberdasher's shop, in quest of ties or hose, or some other necessity in the way of men's wearing apparel, will recall the energetic salesman, who invariably asks if there isn't "something in shirts or underwear today" and is ready to tell of a "special sale" in something or other, in order that the intending buyer of a small purchase might be made into a customer that is worth while.

Not knowing exactly the weekly wage that rewards these men who sell comforts, necessities and adornment to their fellow citizens, we will go no farther than to say that they are real salesmen. The same is much more than can be said of the men who talk face-brick to prospective builders.

When a man—or a women—comes into your office, asking for brick for an outside chimney, and indicating that it is his (or her) intention to build in frame, with painted or stuccoed exterior, does your "star salesman" always ask why the whole building is of something other than brick?

Does he—when the prospective buyer of, perhaps fifteen hundred face-brick, smilingly says that "the plans are all drawn and the figures taken" still stick to his text, which is that frame is a fatal mistake and brick the only means of economic salvation?

Does he fight for a brick order that is worth while? Does he display the same amount of merchandising sense that the seller of ties, and hose and shirts shows, when he insists that because you want a collar, you need several dollars' worth of the things he has for sale?

Think it over—are you, and are your men—order-takers or order-makers?

Chicago—Summer

Cooled by Lake Breezes and Best Park System in America, "I Will" City Offers Its Hospitality



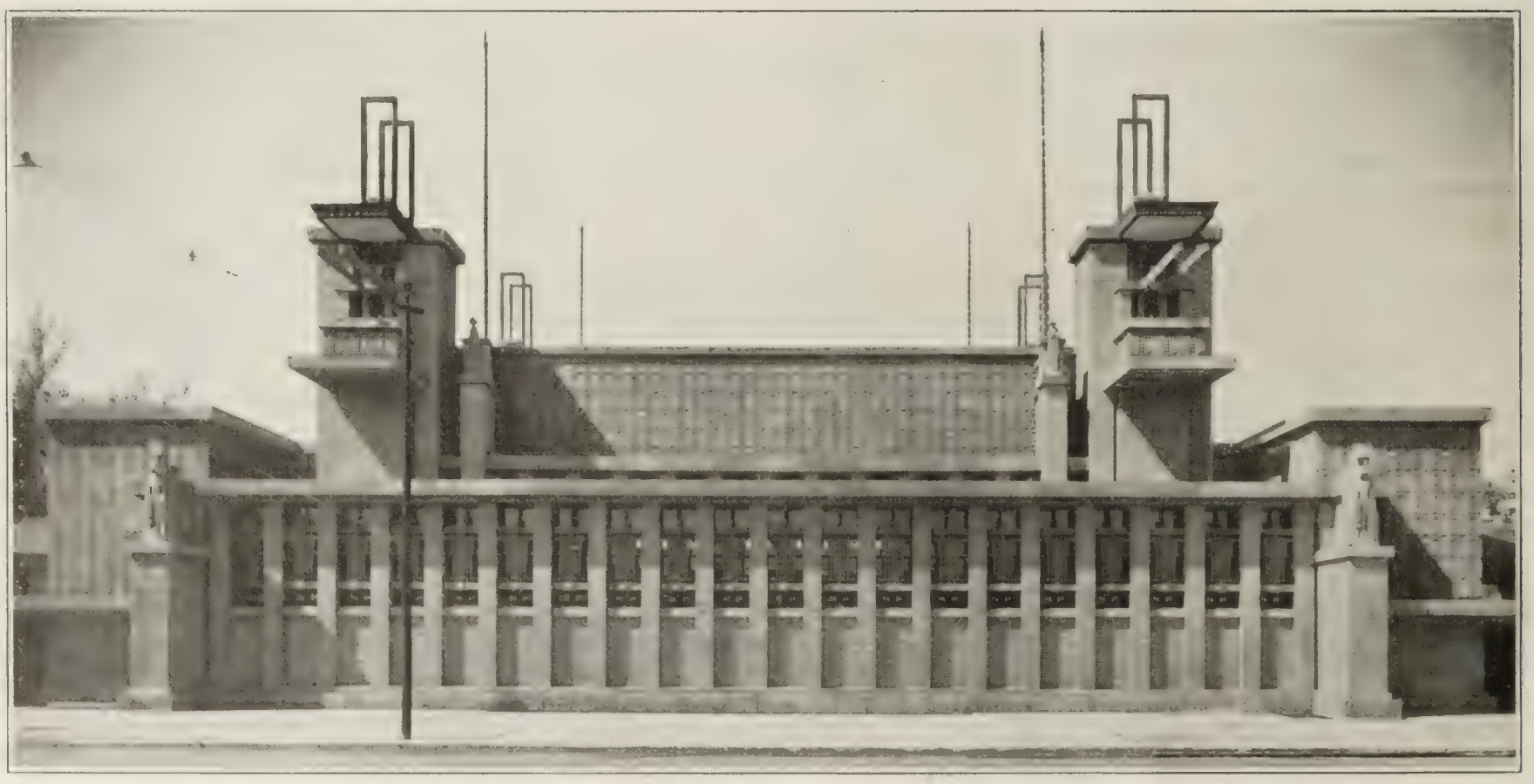
One of the Entrances to the Midway Gardens. These Entrances are Neither Broad nor High, and this is Designed to Heighten the Effect of Vastness Within the Enclosure

CHICAGO HAS MANY POINTS that commend it as an "ideal summer resort." Among these, and perhaps first, is the fact that it *is* Chicago, with all that statement implies; then there is the undeniable fact that Chicago is on Lake Michigan, hugging its shores for miles, and tempering the summer heat with an all pervading, much blessed and much blessing lake breeze. After these two, the next important point of Chicago's attractiveness is debated.

Those who claim to know, and these are the ones who have seen everything worth seeing in the "I Will" city, give the palm to the Midway Gardens. There is nothing like them in Chicago—nothing like them in America—nothing like them in the world.

A story is told of two men who visited this wonderful place, and who walked, unseeing, through its entrance halls and passages, noticing nothing. Suddenly they came to the east terrace and turned their eyes toward the garden. The entrancing beauty of the place brought them up, sharply. There was a mutual exclamation of delight and astonishment, then both were silent for several minutes. Finally one spoke. "The most wonderful place I've ever seen," he said. "It is marvelous—the architectural design, the details, the color, the lights—the whole effect. It is the most perfect thing of the kind that's ever been done."

Now this man had been everywhere—in this country and abroad. He had seen the famous gardens of Munich, Dresden, Frankfort; all the most celebrated and beautiful places for music and outdoor dining that are found in France and Italy. He knew what he was talking about, and he put the Midway Gardens, of Chicago, ahead of all the rest. This is a true story, and it illustrates perfectly the effect that the Mid-



As the Midway Gardens Appear from the Street. The Work Above the Tower is, as yet, Incomplete

America's Resort

In the Midway Gardens, at the End of the Old World's Fair Midway, Chicago has an Architectural Wonder



Above the Brickwork, Cement is Used with a Fineness of Feeling that Must be Seen to be Appreciated. The Entire Structure and Ornamentation are Imperishable

way Gardens always produces upon those who see it for the first time.

To the man who makes or sells brick, it may be that the graceful use of his material will intrude itself upon his enjoyment of the general effect. If that be so, the fact that more than 300,000 rough surfaced, light buff face-brick were used, will give him some cause for thought. While many of the architectural details and the unusual statuary are done in cement, the generous use of brick will appeal to the man who believes in brick and its beauty as well as in its utility.

It is to the credit of the men who built this great open air playhouse, that they discarded the tawdry white-wash and green paint of the amusement park, as it is understood in a score of cities, and wrought a thing of beauty in lasting materials, giving brick its due importance and using it with rare skill and discretion.



The Orchestra "Shell" as Seen from the South Balcony. More than One Hundred Musicians Find Space Under this Great Canopy and as Many Dancers on the Stage in Front of It

There is, in a manner of speaking, no "style" to its architecture. By that is meant that no period of time, no nationality, no history is repeated in its design. It is "futurist" in that it creates a style or period which will be used as a model by architects and designers for years to come.

Frank Lloyd Wright, from whose fertile brain came the wonder-picture of the Midway Gardens, in a discussion of his architectural work, said: "Just why architects borrow the semblance of styles from the past, adopting or even adapting these forms which changing conditions have robbed and left barren, has always been a mystery to me. It seems such a foolish neglect of our natural gifts. New modes of living, new needs and new tools should bring forth new styles, with their elements of new decoration." In the Midway Gardens, in Chicago, Frank Lloyd Wright has dreamed a dream that is of the future, and, bringing it down to the present, has crystallized it in cement and brick.

This is his latest work—a summer garden and a winter garden at the foot of the old World's Fair Midway, a hundred-foot-wide and mile-long parkway, connecting two of Chicago's largest parks. Here the artist and his dream came to a meeting and for the first time in many, many years, the three arts, architecture, sculpture and painting, are found proceeding from and determined by the same mind.

A writer in the "International Studio," telling of the interview between the art critic of one of the great daily papers, and Frank Lloyd Wright, relates the following:

"Mr. Wright," said his interrogator, "hasn't your work rather cubistic sympathies?"

"What do you mean by 'cubistic'?" he replied. "If you refer to the fact that the work is a form of natural design rather than nature imitation, I might plead guilty."

"Yes, but natural design rather than nature imitation? What do you mean by that?"

"Simply this—*interpretation* instead of *imitation*. For generations we have been accepting the literal aspect of nature's forms faithfully—often the more faithfully the more appreciated—and so recording it for the 'adornment' of our homes and public buildings. We have passed the time when we need depend upon these obvious realisms.

"We have long passed that childish state wherein we de-



The Decoration Applied to the Plaster in the Winter Garden. Here Vivid Effects are Given in a Series of Circles. The Screen Which is Seen ,Back of the Cigar Case, is of Black Marble

manded of music that it imitate the barking of a dog, the singing of the nightingale or the soft rushing of a river. We have gone beneath the surface in music that we might interpret all of these; we have found the fundamental chords of harmony, and we have arranged these chords in subtle patterns which bring us into closer sympathy with the eternal and which recreate to us the joys and sorrows of the ages. Must the graphic and plastic arts remain on the low plane of imitation? Are there no elemental chords of harmony in line, in color or in modulated surface? Must we, forsooth, go on painting and sculpturing the literal flower, the literal nude, the literal platitudes of obvious externalities, externally?"

And it was from this thought that came the altogether different and altogether beautiful outlines, colors, shades and shadows, details fine and broad, that make the Midway Gardens, in Chicago, the mecca of the artist, the architect, the music lover and the *gourmand*—for, be it whispered, there is a futurist *chef* at the Midway Gardens, whose gastronomic art is almost as wonderful as that of the mind which conceived this altogether marvelous pleasure palace.

Some idea of the immensity of this fairyland is found in the fact that more than five thousand people can be comfortably seated,—five hundred, perhaps, in the chairs that are arranged before the orchestra shell, and at the service of patrons who come only to hear the music and see the dancing,—and nearly ten times that amount at tables.

It is unfortunate that the pictures which are shown with this story give so meager an idea of the place they are designed to illustrate. They were taken, as might be imagined, in daylight, and the Midway Gardens does not put on its mantle of beauty until after the sun is an hour, or more, on its way west. The fact is also present and pertinent that the photographs from which the illustrations were made were taken when the gardens were empty, and so one fails to grasp the "atmosphere" of the evening, with the music, the lights, the color and—perhaps— the clink of glasses, mingled with the hum of voices and the indescribable rustle that is more felt than heard, when many people are gathered together.

And in another way are they unfair—for unavoidable reasons, it was found necessary to open the Midway Gardens before completion, and some of the buildings, notably those along the eastern side, are not shown as they will finally appear.

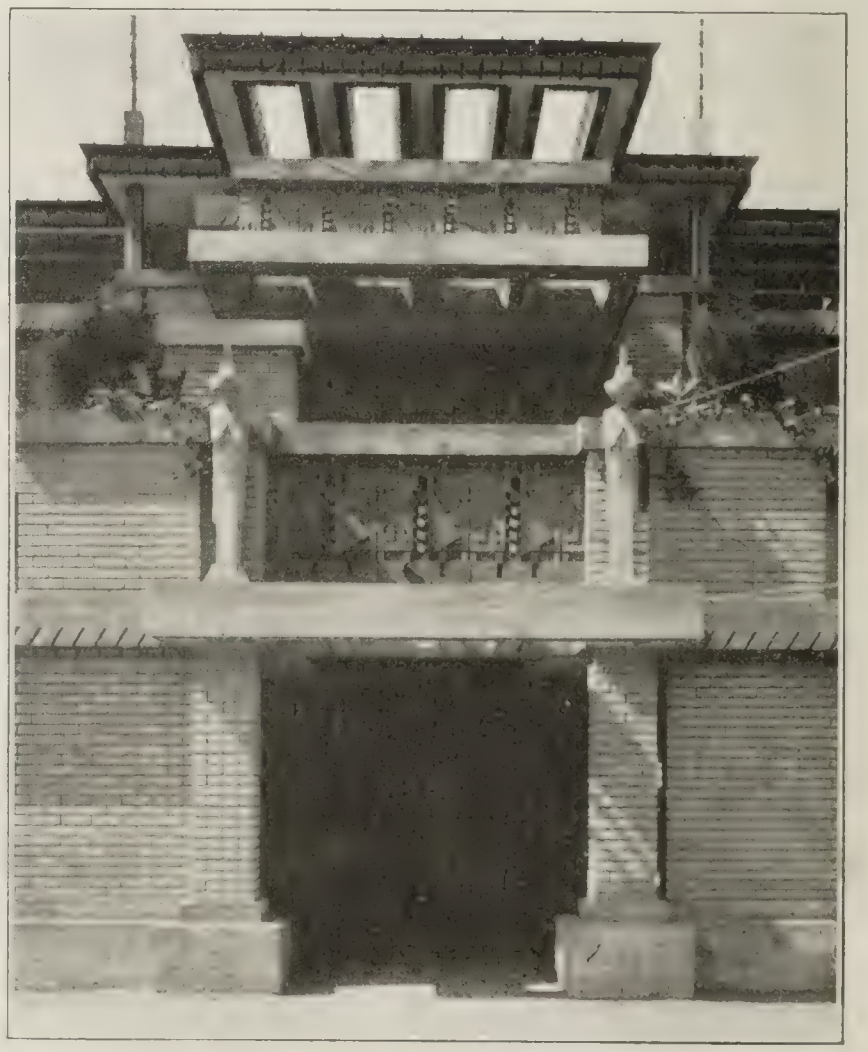
During the summer of nineteen-fourteen, the National Symphony orchestra gave concerts nightly. More than sixty musicians were employed to make this the best summer-music organization in America. During the winter that has just closed, the out-of-door garden was not used, but the winter-garden was thronged nightly. Here has appeared a formidable list of artists, brought from the world's amusement capitals. During the coming summer Pavlowa will dance a whole month in the shadow of the great orchestra shell.

So, if you make, or sell, or care anything at all about brick, go to the Midway Gardens, if for no other reason than to see a great mass of face-brick used to help an exceedingly artistic architectural scheme. If, in addition to being a brick enthusiast, you have an eye for beauty, which is feminine—whether expressed in brick, wood, cement or humanity—don your best clothes and go to the Midway Gardens, for there you will find beauty expressed in many forms.

If, added to your eye for beauty, you have an ear for music—there you will find harmony, served most sumptuously. Altogether it is too wonderful a place for any Chicago visitor to miss.

But, of course, in order to see the Midway Gardens, one must be of Chicago, or accept Chicago's invitation to come in and enjoy some of the things that invite the summer visitor to the great City-by-the-Lake.

Every train that comes to Chicago finds its journey's end. No train runs "through" or "around" Chicago. Once



A Detail of One of the Entrances

you are here, you must alight. And, having stood upon Chicago real-estate, it is well to stay a few days, and see some of the things Chicago has to show you.

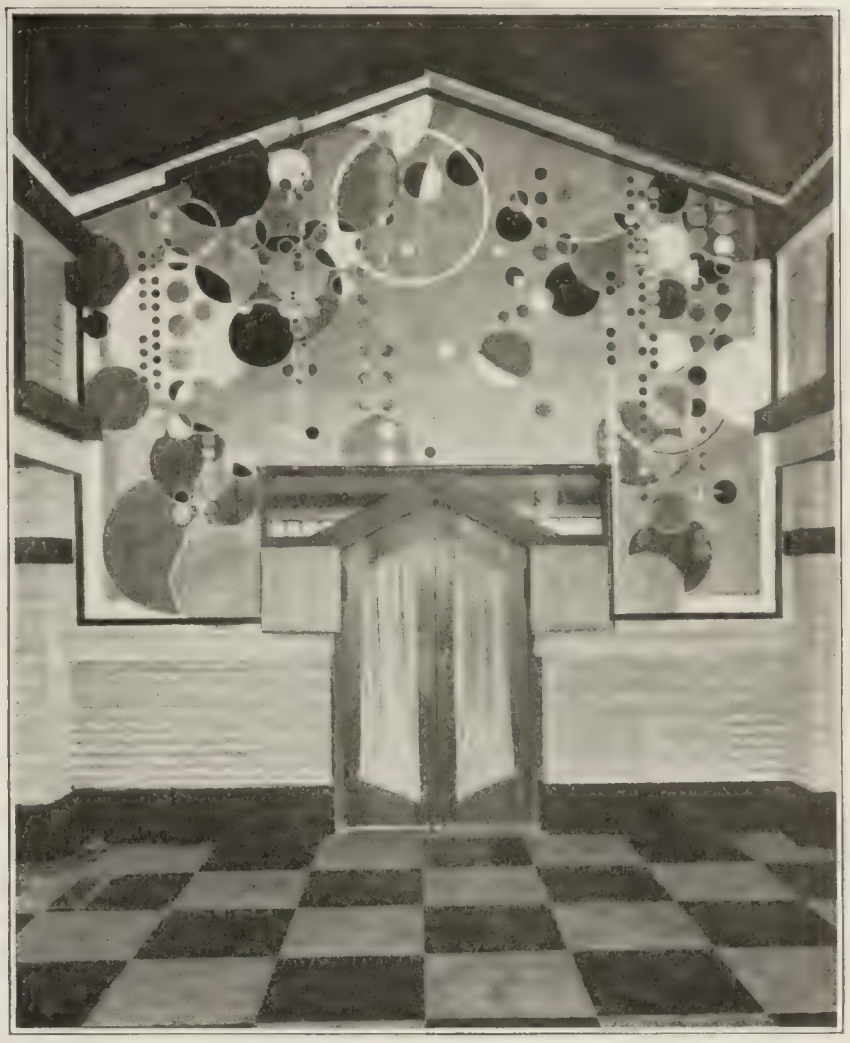
The lake—for that is the second of Chicago's attractions, and, as her newly-elected Mayor says—her "greatest sleeping asset"—washes Chicago along a shore that is close to thirty-five miles long. Of this, many miles are fine beaches—most of them public. In the parks, one sign is forbidden—a sign that is all too familiar in other cities—the "Keep Off the Grass" warning. Chicago's parks are for Chicago's people.

Chicago's hotels need no particular comment. They are many, they are commodious, they serve. The guest who wishes for the ultra-refinement that seeks its proper environment in quiet elegance, finds perfect harmony in the appointments of the Blackstone. The Hotel La Salle, the Sherman, the Congress Hotel and Annex, the new Hotel Morrison, with its already famous Dutch Grill, and last, but not least, the Fort Dearborn, all make for the comfort of the stranger within the gates.

Second, perhaps, to the Metropolitan Museum of Art, in New York, Chicago's art museum is well worth a visit. Here a well organized and well equipped art school is turning out class after class of artists who are destined to make art history in this country and abroad.

But over and above all is the spirit of the city—the "I Will" spirit that is doing so much for Chicago and its citizens. The visitor who makes a study of civic movements is given pause by the constant, earnest and constructive spirit of Chicago's Association of Commerce, which has so grown in strength and power that it calls to itself the best representatives of every craft that works within the city limits. These crafts have each its day, and on that day, the leaders of that line of endeavor break bread together and plan for the betterment—not only of their own business careers, but of the careers of those who are laboring with them. It makes for the City Beautiful—the City Prosperous—the City Hospitable—the City Worthy.

Chicago men are generous of their time—generous of their



Another Detail of the Decoration in the Winter Garden. This Has Been Called "Cubistic" and "Futuristic" by Critics, but, Whatever the "Style," is Impressionistic to a Degree

helpfulness. The Chicago spirit is one of hopefulness. It dares you to be as good, as capable, as it believes you are.

But why go on? To appreciate Chicago, one must come to it, for (as has been said) the first attraction of Chicago is the fact that it *is* Chicago, with all that the name implies.



A General View of the Midway Gardens from the Orchestra "Shell"

Let Us Tell You What Happened—

Sometime last fall, during a convention at Des Moines, Ia., a number of authors and editorial writers were shown about the town in automobiles. The route taken by the party included a four-mile stretch of brick paved road just outside the city of Des Moines. The editor of a large Iowa daily, who was a member of the party, was so pleased with his bumpless, nerve-calming ride over this particular pavement, that he gave vent to his feelings in a succeeding issue of his paper, praising in no uncertain terms the virtues of brick as a paving material and urging their use in the city.

Recently, when the question was before the Des Moines city council as to whether East Grand avenue, between Twentieth and Thirteenth street, should be paved with asphalt, asphaltic concrete or brick, one of the aldermen, remembering what he had already read about the brick pavement above-mentioned, and no doubt having seen this pavement himself, moved that the street in question be paved with brick, and to explain his reason for this recommendation, pointed out to his colleagues the four-mile stretch of brick paving just outside of the city, which had already lasted for twenty years.

In spite of the fact that an asphalt paving company put in a bid for covering the street, and at the lowest figure ever offered to the city, the council voted that East Grand avenue be paved with brick, the contract being awarded to Reinking and Company, of Des Moines.

All of which goes to prove the truth of that oft-repeated, but much unheeded expression—Publicity pays, pays surely if not promptly.

York (Pa) Brickmakers Enjoying Busy Season

After one of the dullest winters in the brick industry, York manufacturers, according to the York (Pa.) "Dispatch," are experiencing somewhat of a boom. All indications point to a busy season, as the settled weather approaches and building operations take on activity. The demand for brick at the present time exceeds that of the same period last year and the year previous. Several of the plants, which had a supply of brick on hand at the close of the last season and had closed down, have resumed operations.

The yards located in York and vicinity are all of the modern style. The old-style yards have been remodeled or else have disappeared entirely; that is, the old system of taking brick from the moulds and having boys to carry them to racks, where they were air-dried, has been replaced by modern steam drying equipment. The advantage of the latter system lies in the fact that the brick are handled less and are more perfect in shape, while less labor is required.

Among the manufacturers in this city and vicinty, are the Spring Garden Brick Company, York Shale Press Brick, Charles E. Miller, William H. Grothe and Gise and Diehl.

Hydraulic Company Takes Over Aledo Plant

The Hydraulic-Press Brick Company, with general offices in St. Louis, Mo., has purchased the plant and property of the Continental Brick Company at Aledo, Ill., the consideration being $170,000. General Manager J. L. Buckley, together with Directors Lamont Cowles and E. E. Emrick, representing the Continental Company, closed the deal with officials of the Hydraulic Company, in the office of W. T. Church at Aledo.

Mr. Buckley, as has been previously announced, will return to Davenport, Ia., where he will assume charge of the offices of the Hydraulic-Press Brick Company and manage the company's business in the surrounding territory.

The capacity of the Aledo plant will be doubled immediately and it is expected that from two to three hundred men will be employed there regularly for the next two years. New kilns and additional dryer room will be built, a steam shovel placed in the shale pit and an additional switching track laid in the yard. The coal mine at the plant will be enlarged and its production doubled to supply fuel for the enlarged plant.

Texas Brickmakers Protest Freight Increase

At the annual meeting of the Texas Brick Manufacturers' Association, held at Fort Worth, Texas, May 3rd, a committee was appointed to prepare a contest to the request of the railroads operating in their state, for an increase of from seventy-five to eighty per cent on rates covering brick and other clay products. It is believed that should the request of the railroads be granted, it would add a burden of about $5,000,000 annually to the operating expenses of the manufacturers. The committee consists of W. C. Martin, Fort Worth; M. Staniforth, Wichita Falls; John Butler, Austin; Grover Cole, Ferris; and W. R. Bennett of Forth Worth, Texas. The committee will prepare an answer to the petition of the railroad companies for the above mentioned increase and will attend the hearing of the petition at Austin, June 5.

About forty members of the association were present at the Fort Worth meeting.

Indiana Paving Brick Men Organize

Indiana paving brick manufacturers and contractors held a meeting in Indiana recently for the purpose of arriving at a definite understanding of the new three-mile road law which was enacted by the last Indiana legislature. This is the law which was mentioned in a recent number of "Brick and Clay Record." The rules for petitioning were gone over and found to be similar to the form of petition which had been used in the past with a most important change—that to permit the use of brick as a road paving material.

The meeting emphasized the importance of a general organization of paving brick manufacturers and paving contractors in Indiana and it is probable that an association of this kind will be formed.

Large Flower Pot Order for Honolulu

D. Raymond, manager of the Garden City Pottery Company of San Jose, Cal., was in San Francisco recently taking orders from the florists for flower pots. Mr. Raymond reports that his company has just installed a number of flower pot machines. An order for three thousand eight-inch pots has been received from Honolulu. In addition to this line, the company manufactures stoneware.

Georgia Brickmakers Form New Association

The latest arrival in the way of clayworking associations is that of the Georgia brick manufacturers, who have just organized a body to be known as the Georgia Brick Manufacturers' Association, of which W. E. Dunwoody, Macon, is the president, secretary and treasurer, and J. Paul Brown of Albany, the vice-president.

The association is soon to hold a meeting at Macon, Ga., notice of which will be given in due time.

Buying Face Brick

In Which a Woman Tells How She Was Transformed from a "Prospect" into a "Signed Order"

By Louine Worden

ARTICLES DEALING WITH THE SALE of face-brick are common. In them, the writers show the most effective way of approaching the buyer and of making a quick and profitable sale. Here, for the first time, is the other side of the medal. The writer of this article, in a series of letters to a friend—the wife of a brick manufacturer—tells of the impressions she received, while listening to the "sales talks" of a face-brick salesman.

Hubbard Woods, Illinois,
April 20, nineteen-fifteen

DEAR GRETCHEN: At last the almost impossible is accomplished. Behold in me the proud possessor, or I should say possessoress, of a home—a real one, and of my own. Had such a thing been possible I would have laid each and every brick. And now that it is done, and I have come into possession, I am half satisfied and half sorry—satisfied that I own a little bit of God's green earth and have built my nest upon it, and sorry—because it is finished, and I cannot ever be as important—as its owner—as I was when I was building it.

You know of the months—almost years—I spent in preparing for the event. Don't you remember, I even wrote you (just because Friend Husband was a brickmaker) and bothered you to get me every sort of book and picture and plan and what-not that you could rake and scrape for me, that would show me how my house should be? But you do not know how I haunted every shop where magazines were sold, and bought what soon grew into huge piles of pictures and print, all showing homes—homes of brick, homes of wood—homes of cement. I know that I grew to be a crank on the subject—and could talk intelligently upon but one thing—building.

You know, of course, that I was spared the trouble of selecting the site, for the property was wished on me by the estate. The first selection of importance was made when I picked the architect. I may have gone wrong in a lot of other things, I was all right in that instance. When you come to see me, in my little house, you are going to agree with me.

After I had decided that he was the right man to draw my plans, and had arranged some of the details with him, the real trouble began. It seemed to me that there were not hours enough in the day to attend to all of the things that came up—and the architect wanted to consult me on almost everything. He would ask my opinion and nod, gravely. Then he would suggest something that seemed a wee bit different, and which really, in the end, was very much better.

Of course, my ideas as to the size of the rooms and the arrangement of them were carried out. It dawned upon me, by the way, and after I had done quite some thinking, that perhaps I knew more about that part of building a house than I knew about anything else in connection with it; it may have been because I had given so much thought to the size of the rooms and the way they were to open into each other—or into the hall—all during those months that I haunted the arts-and-crafts shops and architectural shows.

It was a little tiresome, after a while, and I found myself growing more and more apt to ask him what *he* had to suggest, than to wait for him to ask *me*. But all through it, that architect man just *seemed* to do exactly as I wanted him to, and yet he had his own sweet way about nearly everything.

It was very trying, though, on the social side. I had to fairly give up all idea of seeing friends, and as for teas—why I had to give up going to Mrs. M————'s even, and she always is a temptation, for, as you know, she certainly has delicious things to eat. But on her "days" there was always a salesman for this or that, and because he had come from far away, to show me something wonderful and new in hardwood floors, or something else, I just *had* to receive him, and *listen*.

Bridge went by the board—and there were eight of us—and you can imagine the "ragging" I received, for breaking



"To ask him what he had to suggest"

up the game. Yet I felt that I couldn't disappoint a "busy" business man, who was waiting to impress me that I would live and die in vain regret, if I failed to insist upon the par-

ticular brand of varnish that he wanted to sell me. Joke, isn't it? But I was taking all this very seriously.

But the great strength test of resolution came when I refused an invitation to matinee and afterward to meet the most wonderful young actress of the day. I faltered, and accepted. But the day of the matinee came, and found me home, listening to the wonderful ideas of a man who had just come from abroad, and who was "away up" on wall coverings and drapes. You can judge whether I did right, or not, when you come to see my little home in the forest. I know, beforehand, that you will say I was right in letting the actress "go hang." My drapes are surely "the last word."

The thing that will interest you, though, is the brick. I know that, because I know that hubby of yours makes millions and millions of them every year. And I suppose you know all about them. I must confess that I didn't.

One fine day—as they say in the children's books—the architect called me on the telephone. He said it was time that we went up to————to select the brick. And, it being hot and sticky that day, I promptly told him that I thought he could select them a great deal better than I could. You see, I thought a brick was something about the color of a flower-pot and about as interesting.

Imagine my surprise when he insisted that it was very necessary that I do the selecting, saying that it was a matter of the *greatest* importance. Well, you know *me*. When it comes to matters of *great* importance, I am *there*.

By the time I had reached the city, and made my way to the architect's office, I was tired and not in a very good humor. His place was cool, however, and the water-color sketch he had made, which was supposed to give me an idea of how the house would look, smoothed down my ruffled disposition—somewhat. After a time, he suggested that we walk a few blocks to the offices of a face-brick dealer, whom he knew. The few blocks, through crowded streets, served to ruffle me up again, and I fear that when I came to that brick showroom, I was prepared to be bored to death. I know that I not only felt, but looked warm, and I think my nose was shiny.

The architect was evidently very well known and in very high favor with the brick people. Every individual member of the firm came out of his private office or somewhere, to shake the architect's hand and, at the same time, to be introduced to me. Each asked me if I was going to build, and where, and a few other leading questions, and then vanished, called to the telephone, or by some other business. One remained with us until a salesman had bade good-bye to a man customer, and then he, too, was presented to me, and the buying of my face-brick actually began.

My first discovery was that the brick I was supposed to buy was only a veneer, as it were, and that back of it would be other brick, of some common or lowly order that were altogether beneath my consideration. In fact, these bricks that were being shown me by the exceedingly suave salesman were a great deal like the paint that adorns the exterior of the bungalow in which I lived at the time. Poor me! who thought that bricks were bricks. I know that the only reason those men did not smile out loud was because they didn't dare. To them, I was a brick order, personified.

I found, though, that these outside brick had texture and color, and so I began to sit up and take notice—really take interest in the foolish things. I used to fuss for hours over a new dress which, in a few short months, would be in the discard. And I would not wear a dress with discordant colors or with a hateful pattern weave. Yet here was I, in all complacency, trying to pick out something that I would have to live in, or near, for years—perhaps as long as I lived.



"I was about ready to say 'I think I'll take that one' when—"

The moment this fact dawned upon me, I began to talk! A million questions poured forth—some foolish, I admit—but as a result, I learned that beside the different colors and textures in the brick, the walls of my house would have many of the attributes of a fabric; there would be a pattern, formed by the bricks themselves and by the mortar joints, and a general texture, controlled by the roughness of the bricks and the joints and—finally, a general color-tone, made up of a host of small, bright color-units, blended into warm, yet not obtrusive tones. These are the words the salesman used—I am quoting from memory.

The architect advised against the lighter color-combinations, suggesting that I would like the deeper, richer colors. My taste, you see, was being consulted—that taste which my friends sometimes say is "perfect" (sometimes saying it in a catty way) and so I sat and looked and wondered, while the rather good looking salesman trotted out a half dozen of this, and that, and some other kind of brick, and laid them up with strips of colored felt, to show how they would look, laid in mortar. And, with one eye on the architect, the salesman talked of the rare beauty of this and that combination, and I found myself beginning to discard one after another, until my selection had narrowed down to one or two that were what I called "my style of stuff."

The moment had arrived when I was about ready to say

"I think I'll take that one" when, as thunder from a clear sky, the voice of my willing friend, the salesman, boomed out the information that I really could not get a good idea of how very beautiful these bricks were, showing them, as he now was, in a room where no sunlight served to bring out the high lights—no verdure to compliment the more delicate tones. These are almost his words—not mine. You must admit he was eloquent. Goodness knows I can rave about some things, but I am not yet at a stage where I can go into ecstacies over a few clots of clay.

But his eloquence succeeded in stopping me short from what might have been the worst move in my career as a builder. It seems that one shouldn't pick brick in a brick show-room. It was only another ear-mark of my ignorance. I found myself wondering how I had gone there in the first place. Anyway it settled all idea of my deciding that day. The afternoon was all but gone, and I would have to await the coming of another day, when I could see some buildings where the brick I thought I wanted, had been used—and used where the sun did shine upon them, and where the grass grew green with envy over the praise accorded a square piece of clay—burned to a crisp.

Exit show-room. It stood no chance beside all outdoors.

(To be Continued.)



"Exit show-room. It stood no chance beside all outdoors"

A Few Hints on Burning a Continuous Kiln

Many clays are spoiled because they are burned too rapidly at some critical part of the firing. This is particularly the case with clays which form dark colored cores or hearts. As a matter of fact few clays are damaged by heating too slowly, while most clays may be injured by being heated too rapidly. The great drawbacks to slow burning are reduced output, the extra cost of fuel and the cost of added care and watchfulness on the part of the burner.

When burning slowly, special precautions must be taken or the amount of fuel used will be very excessive. The spaces between the brick should be larger, the trace holes or flues near the sole or bottom of the kiln should be wider and the kiln should be filled nearer to the top than when rapid burning is used, as with slow burning a more feeble draught is needed and there is great risk of this being drawn over the top of the goods instead of uniformly through them, unless the setting is carefully arranged. If a fan is used or the stack has an unusually high draught it is necessary to alter the setting, all the trace holes being made high and narrow and the goods being set closely together, their distance apart depending on the distance from the stack or fan.

The slower the heating the greater is the necessity for skillful setting, as there is a liability of the burner being held back in his work by the irregular progress of the fire if the setting is too close or is irregular.

Such a delay may ruin the goods in some other part of a continuous kiln. Alternatively he may find that some days he finishes one chamber a day whilst on other occasions he can only finish two chambers in three days.

Such irregular working makes it almost impossible to produce satisfactory results, and what is equally important, it means an avoidable waste of coal. The burner is usually blamed for these irregularities, although in many instances it is the setters who are really at fault.

There are few burners who are not dependant on the weather, because this has great influence on the draught, particularly in summer. It is frequently observed that the kiln makes but little progress during the day but is easy to work at a normal rate at night. In stormy weather the variations of the draught are so sudden and frequent that it is impossible to control the burning when a stack is used, and all that the burner can do is to feed so lightly that no harm will result until the storm has passed; afterwards he can work as usual, though it is quite impossible to avoid the loss of time which has been incurred. These variations in draught can be avoided entirely by the use of a satisfactory fan, but there are few brick manufacturers who have yet realized the value of the fan in place of a stack; the reason is that most brickyards have stacks and a man starting a new works will be more inclined to use a stack about which he thinks he knows something rather than to install a fan about which he knows less.

A serious loss of fuel occurs when the fire is worked by allowing the gases to enter the main flue at too high a temperature in order to secure a better draught. The heat contained in the gases is then wasted instead of its being used in the succeeding chambers. This arrangement also checks the fire at a later stage, for the brick will not be fully dried when the heat is applied to them and therefore take longer to heat. Moreover the steam exerts a baffling action on the fire and not only slows it down but makes its action uneven The temptation to play tricks with the kiln is always greatest when the draught is most feeble, and as this occurs chiefly in hot weather it is precisely then that the loss of heat is greatest and the waste of fuel most serious. The use of a fan will overcome this difficulty and will create a uniform draught in all kinds of weather. A recording draught gauge will tell if the kiln is working properly.

There is nothing very difficult about burning if a man will devote himself very thoroughly to the work, but he must work wholeheartedly, with no thought for anything else and must be prepared to forego many things if he would become a skilled burner. Carelessness is particularly unpardonable and a burner must not only be steady but at all times alert and observant if he would avoid failures.—"Brick and Pottery Trades Journal."

High School Girls Win Advertising Contest

"Why Build With Brick" Subject of Literary Contest in Which Editors and Architects Were the Jury



The Prize Winners

Flora Baker, of Decatur, Ill., and Geneva Gregory, of Hervey City, Ill.

INDIRECT advertising, which is publicity, oftentimes brings better results than display. The man who discovers a way to bring his message before the audience he wishes to reach, and in a way that stamps the message upon the memory of his hearers, puts the last ounce of efficiency into his sales work. The way one brickmaker did this is told in the following story, which is commended to everyone who has material to sell.

THIS IS AN AGE of efficiency. The concern or individual, the machine or method that lacks this essential quality, is on its way—to the scrap heap. Efficiency in advertising is gained by analysis, which strains and filters good business thought until it is c. p. and then adds to it *quantum suf.* of what is sometimes called the coin of the realm.

The Decatur Brick Manufacturing Company, of Decatur, Ill., has stamped its advertising campaign with the hallmark of genius. It has applied the art of analysis to a degree that is interesting to every student of the gentle art of selling a finished product through the medium of printers' ink.

The Decatur Brick Manufacturing Company has been in business for a number of years, and expects to remain in business for a great many more. It believes in creating a present demand for its product, and in building up a future demand that will be like coupons on a Government bond—something that can be converted into cash every once in so often, without much effort.

Future demand for brick, in the mind of E. D. Mattes, the general manager of the Decatur concern, lies dormant in the intelligence of those who are children today, but who will be men and women, tomorrow.

With a strong and abiding faith in the excellence of brick as a building material, and in Decatur brick in particular, he set about the task of training the coming brides and bridegrooms of Decatur (and incidentally, its coming home-builders) to *think of brick when they thought of building.*

To this end, he enlisted the spirit of competition, which is strong in Decatur, by advertising a contest. What that contest was is best explained by the advertisement which appeared in two of the daily papers of Decatur, and which is reproduced here.

It will be noted that the judges were the editors of these two papers, and four local architects. It will also be noted that the students who had any hopes of gaining one of the prizes offered, were compelled to pay attention, not only to the literary style of their essays, but *to make a general study of the strong points in favor of brick as a building material.* Without a good, practical knowledge of the latter, they could not hope that their papers would be approved by four of the best known architects in central Illinois.

Right here, it is well to ask the reader if he realizes how far reaching this search for brick knowledge must have been—how fathers, brothers and friends were brought into the discussion—how many people, beside these high school pupils, were drilled in the truth that shall make all men free from the fallacy of frame residence construction.

The contest was won by two girls. It may be recorded that Illinois is a state wherein the Supreme Court has passed on the validity of Equal Suffrage, and declared (with some division) that women were entitled to the ballot.

The Decatur "Herald" gives the following account of the contest:

"*First prize*—$15; Flora Baker, 117 North Water Street. *Second prize*—$10; Geneva Gregory, Hervey City. These are the successful competitors in the Decatur Brick Manufacturing Company's contest. Both are juniors in the High School. A committee of impartial judges awarded them the honors for the best compositions on the subject 'Why Build with Brick.' There were about forty entrants, all from the High School. The judges took into consideration not so much the literary excellence of the themes as the evidence of careful study and observation, and originality.

"Many compositions had to be thrown out because of exaggerated statements, or those that were positively untrue. Some indicated that their sources were magazine articles rather than the result of inquiries made direct to contractors and architects, or others who understood brick through the actual handling of it. Some writers tried to draw conclusions from a recent fire, which did not apply. The winning compositions follow." The first prize winner reads:

WHY BUILD WITH BRICK?

Why should we build with brick? Because brick is the one material which satisfies all the demands of the modern builder—endurance, safety, comfort, health, beauty and economy.

Of the materials offered for building which is the most

permanent? Wood decays in the course of ten or fifteen years. The stone generally used for building purposes will last longer than wood, be prettier, and look more imposing; but stone will gradually decay and crumble away. Brick will *not* decay because it is now so made that it resists the action of water, heat, and cold. By "the ultimate test" of everything—time, the durability of brick has been proved.

Modern Brick Unaffected by Fire

After being baked for days at a white heat, the modern vitrified brick is wholly unaffected by the heat of fire. Thus we see that by using brick we can help lessen the disgracefully large per cent of loss by fire in America, for according to government reports, the larger per cent of fire losses is due to wood.

The walls of the brick buildings are thicker and less penetrable than those of a wood structure, thereby being cooler in summer and warmer in winter.

Because of the composition of brick no decay, which is injurious to health, takes place.

The beauty of brick buildings is almost unsurpassed in modern architecture, for the possibilities which the many shades of brick now obtainable afford in pattern work and artistic touches are almost unlimited

Many of the best examples of brick architecture in England, Holland, and Belgium are noted for their pattern.

First Cost More than Wood

Though a building is durable, safe, comfortable and beautiful, we can possess it only on condition that we are rich if it is not an economic proposition. The first cost of building with brick is about 10 per cent more than the first cost of building with wood, but is much less than that of a stone one.

When the first cost is paid, the cost of a brick building is complete, whereas the wood building must be repainted and repaired frequently. In about ten years the continued cost of painting and repairing would pay the ten per cent difference. Why not pay more once than to be continually dropping a nickel in the painter's hat, and have a building that is always in repair and just as valuable, if not more so, twenty-five years hence as it is now? The brick structure will command a higher price any time than the wood building, and will not so deteriorate in value as it grows old. The insurance on brick buildings is another economic advantage of brick, for the insurance rates on structures of brick are always lower than the rates on buildings of wood.

Wood has just one weak argument in its favor; stone has about two stronger ones, but brick outshines them both when they are at their best, and fills all six requirements: Everlasting endurance, safety, comfort, health, beauty of design and decoration, and comparative economic value.

THE SECOND PRIZE WINNER

Why build with brick? This is a question every man who intends to build anything, be it garage or a factory, should ask himself. It is an important and serious question and one that deserves your attention. Here are some of the reasons why you should build with brick:

First of all you demand comfort, especially in a dwelling house. Certainly this may be obtained by building with brick, which makes a house that is cooler than frame in summer and warmer in winter.

Next, you demand beauty. A brick house, built on artistic plans, is certainly as beautiful as any other. The day has passed when a house must be made of that staring red brick.

Brick Is Durable

But, of course, with beauty and comfort must come durability. Nobody cares to build a house, factory, or business building of any sort, that isn't durable. The most conclusive evidence of both the durability and safety of a brick building is—the rate of insurance is lower. You can readily see that there is less danger of fire. If you wish other evidence of durability, take a drive with me through the residence district of our city. Here is a concrete house, built only a few years ago. Do you see that large crack on this side? That shows the durability (?) of concrete. We see the same thing is true of the plaster house in the next block. Do you wish to spend your money for this sort of material? Here is a frame house. Do you see those loose boards, and notice how the paint has washed away? That is evidence of a frame house. In the next block is a brick house. Do you see any of these defects here? No, even though it has stood longer than any of the others, it looks as well as ever.

Question of Cost

But, you may argue, it costs more. We admit that it costs more in the beginning, at least more than a frame house. But this is not the only expense you must consider. As we have said before, a brick house is warmer in winter and cooler in summer. This saves fuel in winter and ice in summer. Small items, perhaps, but nevertheless important ones. Then the cost of painting may be subtracted, and the difference in insurance. So, you see, the brick house is not so much more expensive, after all.

Competitive Contest

Open to Decatur High School Students. . . . .

The Decatur Brick Mfg. Co. will give a prize of $15.00 for the best article and $10.00 for the second best article submitted on the subject, "Why Build With Brick?"

Rules For the Contest

Subject: Why Build With Brick?

Article limited to five hundred words.

Contest opens today, Sunday, April 4.

Manuscripts must be delivered to the office of the Decatur Brick Mfg. Co., 222 N. Park St., by six o'clock Wednesday evening, April 21.

Name of author must not appear on the manuscript. Private mark of identification must be placed on manuscript and a letter bearing this mark, together with the name of the author, must be mailed to the Decatur Brick Mfg. Co. Use a mark which will not likely be duplicated.

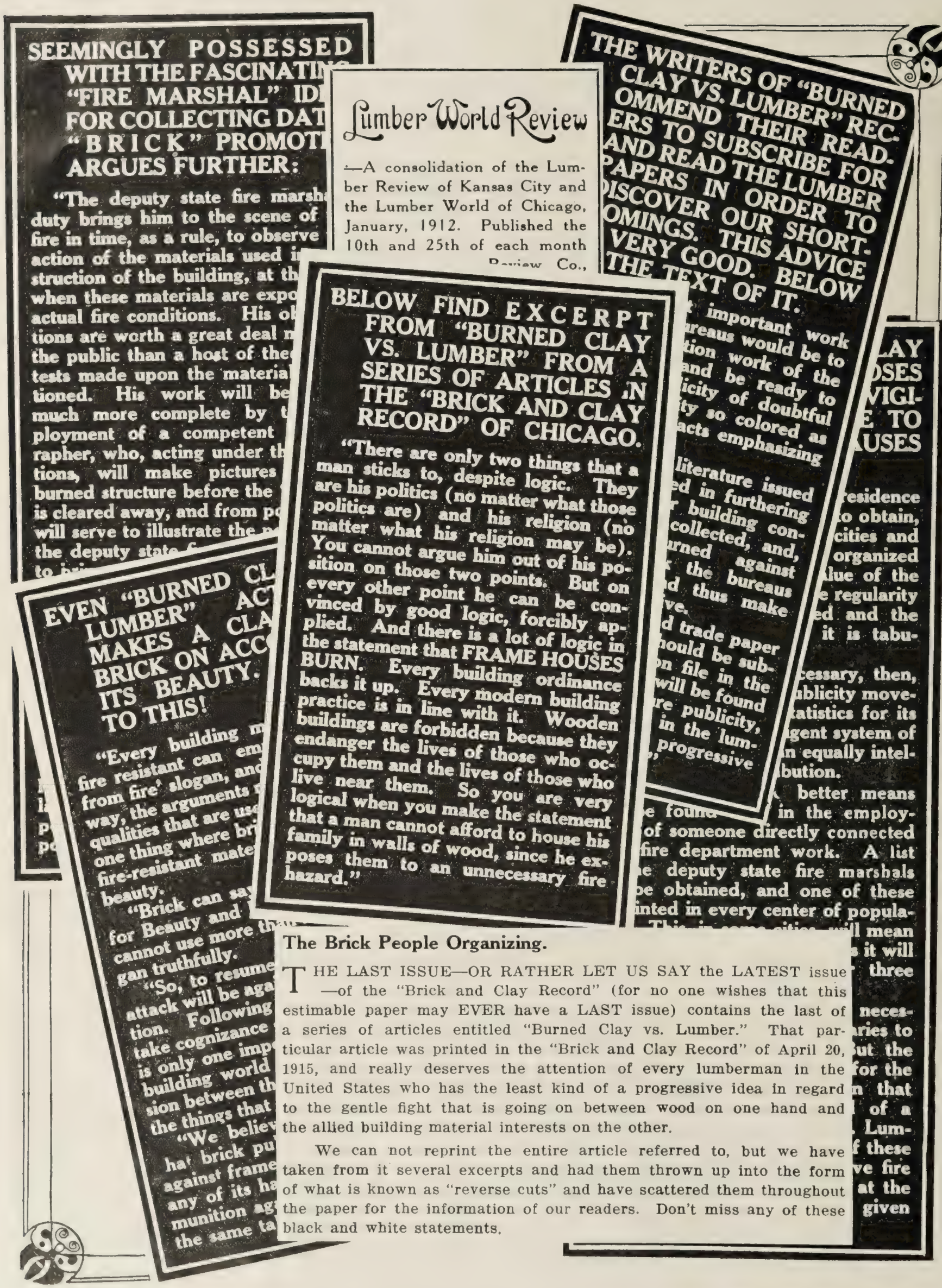
Contestants may gather all the information they can obtain on brick building by reading, from contractors, from architects, or from any other source. Panels of twenty-one styles of brick are on exhibition at the office of the Decatur Brick Mfg. Co.

Children where any member of the family is connected with the Decatur Brick Mfg. Co. are excluded.

The two winning stories, with the names of the authors, will be published Sunday, April 25, in both The Review and the Herald.

Judges will be Mr. Warren F. Hardy of The Herald, Mr. Howard C. Schaub of The Review, and the following architects: Mr. C. J. Aschauer, Mr. Bartley S. Brooks, Mr. R. O. Rosen, and Mr. John A. Scribbins.

The Advertisement that Announced the Contest



The Brick People Organizing.

THE LAST ISSUE—OR RATHER LET US SAY the LATEST issue—of the "Brick and Clay Record" (for no one wishes that this estimable paper may EVER have a LAST issue) contains the last of a series of articles entitled "Burned Clay vs. Lumber." That particular article was printed in the "Brick and Clay Record" of April 20, 1915, and really deserves the attention of every lumberman in the United States who has the least kind of a progressive idea in regard to the gentle fight that is going on between wood on one hand and the allied building material interests on the other.

We can not reprint the entire article referred to, but we have taken from it several excerpts and had them thrown up into the form of what is known as "reverse cuts" and have scattered them throughout the paper for the information of our readers. Don't miss any of these black and white statements.

It Would Appear that Gardner Read and E. Winfield Day had "Put a Bee" on Some of Our Friends in the Field of Lumber, from the Above, which Is a Series of Clippings from the "Lumber World Review" of May 10

Wartime in Hungary

Hungarian Brick Plant Operator and Maker of Mosaic Writes of Industrial Conditions in Austrian - Hungary

THE INTENSE HUMAN INTEREST of the following letter commends it to every reader of this magazine. Here a fellow-clayworker, a fellow operator in brickmaking and in tile manufacture, writes of his being called to his colors and of the "darkening" of his plants until the close of the war, which, he predicts, will be in September of this year. There is much interest, too, in his suggestion of a model pottery plant, that could be started by the co-operative effort of the pottery interests of America, and, by being put under competent direction, give pottery the "tradition" which, he claims, it now lacks in this country.

By Eleöd

Hungarian Honved Hussar Officer

Szabadbattyán, Hungary, April 6, 1915.

EDITOR, "Brick and Clay Record": Thinking it might interest you to know what one of your subscribers is doing, over here in the war-zone, I am going to take advantage of the short time that I am home in the back-country, to write you. I went under colors at the very outbreak of the war, being a non-commissioned officer (*Oberlieutenant*) of a territorial Hussar regiment. I have been under fire, but was sent home, recently, and am drilling soldiers here, for the new regiments.

My two clayworking plants have stood idle since the very first day of the war. One of these is a brick plant, with a capacity of three million and the other a ceramic mosaic plant, in which I made tile similar to those produced in Trenton, N. J., at the plant of the Mueller Mosaic Company, with whom I worked at one time. These tile are glazed, with both matt and shiny finishes, and are of the half-inch and three-quarter-inch sizes.

At the time of my leaving the works to join the army, we had a number of large orders on hand, but we lost them all through not being able to supply the material when it was wanted. Both plants will be dark until the war ends, when I shall go home.



A Brickmaker Who Has Been Under Fire In the Carpathians

The other plants in which I am interested, on account of their ownership being in the family, are also idle, with the exception of one—a plant producing earthenware. This is kept busy with orders for sanitary goods for the military hospitals and the Red Cross. This factory is using the Hungarian brown coal instead of the Prussian hard coal, which is very difficult to obtain now, on account of the railways all being in the hands of the military authorities. Industrial plants cannot get cars—either to bring in raw materials, or ship the finished product, unless the latter is to be used for military purposes.

The family owns three glass factories, which are also shut down. There is but little likelihood of their being opened before the war ends, which will be, we are certain, sometime around September of this year. When we are operating these factories, we ship from 60 to 70 per cent of the output to the United States and to England. Some of the product was sent to the United States during the earlier weeks of the war, but not after that, for the works closed for want of coal, sand and labor. Nearly all of our younger workmen are soldiers now.

Throughout Hungary, the brick plants are nearly all shut down. Some, situated near large cities and which had orders to fill, worked well into last summer, substituting the Hungarian brown coal for the German coal, and using women in the pits, and wherever else they could be used, to take the place of the men who had been called under arms. One by one, however, they gave up, and the end of the year found but few open. Since the first of the year, the number of operating plants has increased, and the hope is expressed that many of the plants will be opened again, in a few weeks.

At the beginning of the war, many factories were closed through nothing else than nervousness, the owners taking the view that war was an unknown quantity and that it was best to hold on to all of the cash they had, rather than to risk any of it. That feeling is passed—we have acquired a proper notion of the war and know that, while at the front life is abnormal to a degree, here in the back-country life has

changed but little. We see less young people and we live a little bit more expensively—that is all.

Germany was cool without nervousness at the outbreak of the war—the factories there kept on working, very much the same as though nothing unusual was going on, excepting perhaps, those plants that made goods largely intended for export. It happened that quite a number of German plants that made earthenware and hard porcelain were compelled to reduce their output, being unable to ship to either England or the United States, and this, I learn, has resulted in many of the American potteries turning their plants over to this kind of ware, to supply a demand that was filled, in the past, by German and Austrian plants.

I know the difficulties that attend the making of this class of ware—particularly vitrified china—for I introduced it, myself, at the Cook Pottery Company, in Trenton, when I was working there. They are, I believe, working the same bodies that I made for them. There are two bodies, one for the outer and the other for the inner rings.

One of these bodies was colored with an aniline blue, so that it could be seen at every stage of manufacture, from the slip house until it was placed in the kiln. The reason that called for the introduction of two bodies was the uncertainty of the kiln temperatures, which precluded the use of one body only.

There is, I believe, but little foundation for the belief that seems so prevalent in the United States, that by the simple process of supplying American made china to the American market during war times, the American people will be made blind to the superiority (in some ways) of the German china (*hartporzellan*) or that of Austria. The American made china cannot be compared with the European product in whiteness or in durability, although it must be admitted that the American china is a good and worthy product. It has, however, a much more glassy structure than the German or Austrian china, and it will not stand the sudden changes of temperature the way the European china does.

In addition to this, it lacks the fine white color of the European ware, and has, instead, a yellowish or grayish tint, which, as we know, comes from burning in an oxidizing atmosphere. This is a strong point, for all European china is burnt with a part reducing atmosphere at the second fire, and in this way, the coloring agent, which is oxide of iron, is not reduced to any great extent.

This defect in the American china will be with it, so long as the American potter burns his china biscuits to vitrification first, and then glazes them, burning the second time at a lower temperature.

I fear that it will be a long, long time before any real china or hard porcelain will be produced in the United States, and any customer, accustomed to German china, and who has had to recourse to American china on account of war conditions, will return to the European ware as soon as shipments begin to resume. Thus the European potter, who cannot work now, anyway, will have his trade back as soon as he is able to take care of it.

People wonder why it is that real china cannot be produced in the United States, and of the same quality as that of Europe. The answer is simple: This branch of industry requires a tradition. For this reason, I am convinced that no large factory could be started in the United States, no matter how large the amount of capital behind it, that would make a good product, at a commercially correct cost, with the early turning of the kilns. Other industries have been born over night, but it is not so with pottery.

And we Hungarians are in the same boat. There is not a single china works in all Hungary, all of our wants being supplied from Germany and from Austria. We possess, like the United States, good raw materials—splendid china clays—and the government would be willing to assist and encourage the establishment of a pottery to make this kind of ware. Yet there is no such plant in Hungary, and we spend millions, every year, buying ware that it seems right we should be making.

There is one thing that could be done in the United States, and I will suggest it, even though it seems a little ahead of the times. It is that an experimental plant be started by the combined subscriptions of all, or as many of the potters as would be interested in the development of this branch of their work. If Professor Orton, of Columbus, or someone of his attainments, could be induced to devote his time to the operation of this plant, with the sole object of perfecting a new industrial possibility, I believe it would pay the potters handsomely to engage him, paying him a liberal sum for the time he gave this plant. This plant, with its costs divided between, perhaps, forty or fifty potters, would not be a great expense, and its results would, I am sure, be very great. The plant would need only one kiln, and should be of the kind that is used in Germany—not so large, maybe, yet it should not be too small.

You, with your large industrial resources, can do things like this, that are denied to us. This is, in a way, an off-set to our advantage, which comes from the assistance that the government gives private enterprise, if that enterprise is the establishment of a new outlet for our raw materials, to which is added the skill of the Hungarian workman.

There is, in this country, a great field for American clay-working machinery. The plants all operate old-fashioned machinery, some of the brick plants producing from 4,000 to 7,000 soft mud brick a day—and being satisfied with that "run." Most of the plant owners do not even think what other—for instance, American—brickmaking machines and brickmaking plants are like.

I believe they will awaken to the modern idea, as soon as the war is over, and the men come back to the plants again. I, for one, am doing all I can to show them that modern methods and modern machinery are necessary, if the plants are to be able to turn out the quantities of material that will be wanted soon after peace is declared.

Clay Ship is Torpedoed

The Steamship "South Point," loaded with five thousand tons of china and ball clays, part of which was intended for use in the W. S. George Pottery Company's plant at East Liverpool, Ohio, was torpedoed and sunk off the coast of England on March 23 by a German submarine.

The W. S. George Company, however, suffered no loss from the sinking of the "South Point," as it buys its clay at Newport News or Philadelphia after the cargoes of clay are taken up by the wholesale dealers. Ohio, West Virginia and New Jersey potteries were also to receive some of the clay shipped in this vessel.

Postcard pictures of the sunken steamer have been received at the offices of the W. S. George Company and have created considerable interest. Mr. George states that shipment of four thousand tons of clay is now on the seas, the larger part of which is destined for his plant.

Roseton (N. Y.) Brick Plants Reopen

The making of brick has been resumed for the season at the plants in and immediately adjacent to Roseton, N. Y. Although this resumption of operations comes a little later than usual, it is anticipated that a fair output will be made before the plants close next fall.

A New Use for Clay Block

Fire Proof Snow Fences Built on Scientific Lines Open New Field for Burned Clay Tile



Fig. 1. Showing the Alternate Courses of Hollow Block which Give the Wind a Whirling Motion and Break its Force

A HOLLOW CLAY BLOCK—or rather a number of them—catching the fury of the snow storm, stopping with a firm hand its mad onward rush and compelling it to drop its white burden in a harmless pile at the foot of the blocks, is one of the latest accomplishments in the realm of burned clay.

To the traveler, the snow-fence along the railroad right-of-way is a familiar sight, nearly always being constructed of six-inch boards spaced about an inch apart, and standing at exposed points or just above a cut through a hillside. For a good many years such a fence could be seen about a half mile west of Adel, Iowa, on the Des Moines Division of the Chicago, Milwaukee and St. Paul Railroad Company. Like many other commonplace objects along the routes of travel, this fence probably attracted little attention on the part of passers-by.

It remained for an enterprising clay products manufacturer operating a plant in Adel to see in this very ordinary snow-fence, an opportunity to demonstrate the adaptability of his ware. This manufacturer had just begun to produce a patented corn-crib block, which he was selling to the neighboring farmers, and while passing the old wooden fence one day, the idea of using these blocks to prevent the snow from drifting over the railroad tracks suddenly dawned upon him.

With fullest confidence in the practicability of his proposition, he succeeded, after persistent effort, in securing permission from the railroad officials to replace a part of the old wooden snow-fence just outside of Adel with a new fence one hundred and fifty feet in length, and built of hollow clay corn-crib blocks, the purpose of this fence being to demonstrate to the railroad company just how good a snow stop these blocks would make—not by presenting a solid front to the storm, but by breaking the fury of the blast and causing the snow to fall to the ground before reaching the tracks.

The fence was built of 8x8x8 inch corn-crib blocks, which are cut on an angle at both ends instead of being perfectly square or cube shape. As may be seen in Fig. 1, each succeeding course of the blocks was laid with the air spaces running in the opposite direction to those in the course below, so that in a plan view of the fence, the air spaces in the tile may be seen to cross those in the lower course. The fence is five feet nine inches high and is built in a wavy line, as shown in Fig. 2, the object of this peculiar construction being to avoid the necessity of the foundation which would materially increase the cost of building this type of snow-fence.

Snow-laden wind, in passing through this fence is broken up into two different movements, that part passing through every second course of tile being in the same direction, while that part passing through the alternate layers of tile moves in the opposite direction. The two different movements of wind converge and meet on the opposite side of the fence, where they develop a whirling motion. The blast, losing its force in this manner, drops the snow to the ground, piling it up at an angle of forty-five degrees from the foot of the fence, and at a safe distance from the tracks.

In addition to being an effective snow stop, this fence is absolutely fireproof. Just how valuable this feature is in a snow-fence, may be realized when it is remembered that the most susceptible point for the formation of a drift along a railroad, is at a cut through an elevation in the land or a hillside. Such cuts are usually accompanied by a grade of small or large degree, and to make these grades, locomotives, especially those pulling freight trains, have to work harder, and in their puffing, belch forth a shower of sparks. These sparks falling into dry grass at the bottom of a wooden snow-fence,



Fig. 2. A Snow-Fence Built of Burned Clay Corn-Crib Block

are very apt to set fire to the fence and destroy it.

The cost of a burned clay snow-fence, according to H. R. Straight, of Adel, to whom is due the credit for originating this type of fence, is no more than that of a wooden fence, when the lasting qualities, cost of maintenance and frequent replacement necessary with a wooden fence, are taken into consideration.

For those who are curious to know just how well this fence is performing its duty and what the railroad officials who are responsible for its existence, think of its efficiency, it is suggested that a call be made upon the superintendent of the Des Moines Division of the C., M. & St. P., whom we are sure will furnish the desired information. If such a call is not possible, we feel safe in anticipating his reply to be—"the stuff is great; makes the best little snow-fence on the division."

Where Building With Brick Paid Handsomely

WHILE THE GREATER PART of a huge grain elevator was consumed by a spectacular fire, resulting in a loss of $400,000, two brick tanks, each one hundred feet high and containing 50,000 bushels of wheat, remained standing, apparently unscathed by the fierce attack of the blaze.

The occasion was a recent fire in the Huhn Elevator Company's wheat storage building, Minneapolis, Minn., when a disastrous conflagration swept the elevator, destroying it and a quarter million bushels of wheat. The first intimation of fire came when the night watchman discovered flames in one of the compartments of the elevator. He immediately turned in an alarm, to which thirteen engine companies responded, but owing to the heaviness of the roads in the vicinity of the blaze, they were prevented from arriving promptly at the scene of the fire. This gave ample time for the flames to get well under way, and incidently, for the burning building—which was of wooden construction, covered with sheet iron—to prove to what extent it could resist an attack from fire.



Fifty Thousand Bushels of Dollar Wheat Were Saved from Fire by These Two Brick Tanks on April 16

Just how well it stood up under this test may be gained from the fact that fifteen minutes after the first alarm was sounded and while some of the engine companies were still digging into the gumbo in an effort to release their apparatus, the huge building buckled up under the weight of the wheat and collapsed.

Not content with its own destruction, the falling ruins cast forth a shower of sparks, which went sailing through the air and, landing in an adjacent residential district, kept the residents for some blocks busy extinguishing small fires with buckets and garden hose.

The elevator was built in 1901, and was 190 feet high. The total loss on the wheat is estimated at $337,500 while the building and machinery were valued at $109,000, the larger part of which was covered by insurance.

With the past well sprinkled with disastrous elevator fires, accompanied by enormous monetary losses, and the well-established fact that a grain storage building is the most susceptible place for the kindling of a blaze, it would seem strange that elevator companies still persist in "building to burn." In the case of the Huhn elevator fire, however, the fact that the building had stood for so many years without a serious fire loss, probably accounts for the existence of the flimsy construction.

It is to be noted with considerable interest that, hardly had the flames of the burning wreckage died down, A. G. Huhn, son of the president of the elevator company announced its intention to replace the burned structure with one of modern construction and fire resistant in every respect.

Having learned the lesson of safety from fire by passing through one, the next important consideration is the choice of the proper materials and construction with which to make a fire-safe building. With this fire, it is not necessary that the site be visited or the ruins carefully inspected to settle the question. A man a thousand miles away and with no special engineering training, by looking upon the accompanying illustration could readily come to a decision in this matter.

It is suggested that the company accept the most forceful conclusion of its recent fire, and build with brick.

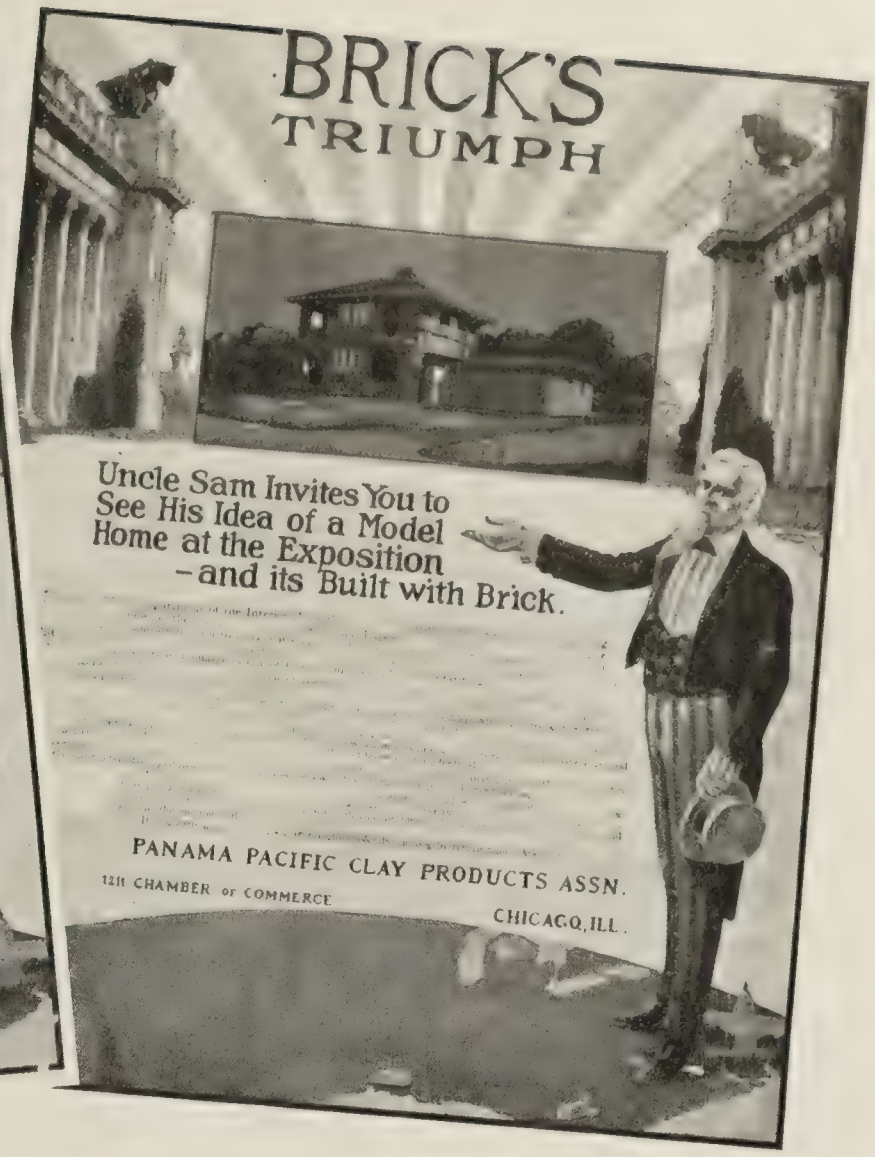
Do You Make or Sell Drain Tile?

If you do, you can increase your market by tacking up "Tile Your Farm" sheet-steel signs, similar to the "Build with Brick" signs that are now so familiar. If you order before June 1st, we will place an order large enough to give you a very favorable price.

We cannot accept orders after June 1st.



This Advertisement Appeared in the "Saturday Evening Post" of April 3, Where it Occupied a Full Page. It was Inserted and Paid for by One Firm, which Builds Frame Houses. The Same Firm Bought the Back Cover of the "Saturday Evening Post" of May 15. It Evidently Pays to Advertise Wood Construction



This Advertisement Did Not Appear in the "Saturday Evening Post" of April 3, nor of Any Other Date, nor did it Appear in Any Paper, because the Combined Brick Industry, which includes More than Five Thousand Firms, has Failed in its Support

The captions under these two illustrations are far from being "polite." They may not be politic. The fact of the matter is that a goodly number of men connected with the brickmaking industry *have* given, and generously. And these men are keeping everlastingly at it, hoping for a turn in the tide which will add the amount that is needed to transform this house from a potentiality or possibility, into something that will bring back the dollars that have been invested in it.

When the proposition of building a brick house at the San Francisco Exposition was first broached, the thought that was uppermost in the minds of the men who were back of the scheme, was that millions of people would go to the fair, leaving homes where brick residences were common. Arriving on the Pacific coast, they would be brought face to face with the best frame architecture in America and, at the same time, with the most successful cement stucco work that has been done in the United States.

The moral effect of this will be felt in every corner of the land. The man who went to San Francisco, intending to build in brick when he returned to his home, might come back converted to either frame or stucco.

As a consequence, the Panama-Pacific Clay Products Association was formed, and by a lot of hard work, funds sufficient to build a very handsome house were collected. The house is of brick, with hollow tile interior partitions. It is as nearly fire-resistant as a moderate priced house can be made. Its outlines are excellent and it is worthy of the material with which it is constructed.

It is ready for occupancy. It ought to be occupied by people hired to demonstrate the lessons it was built to teach. They ought to have millions of booklets, setting forth the undoubted claims of brick as the best of all building materials for residence construction.

If you have done all that you believe you can do, for the Panama-Pacific Clay Products Association, think again, and see if you cannot do a little more. Write, if nothing else, to a brother brickmaker, and call his attention to this article. And if, by chance, you have not done anything at all but think about it, remember—the golden moments of that Exposition are fleeting—the war in Europe, and the sinking of the *Lusitania* have discouraged thousands and thousands of people who would have gone abroad, but who will now go to the Fair.

The house is built—built in San Francisco, because more people will see it there, a thousand-fold, than would see it if it were built in New York, in Chicago, in Philadelphia or St. Louis. It was started by Chicago money, but when you think that Chicago buys more face-brick from states other than Illinois, than does New York City from states other than the Empire state, you will realize that these Chicago men were working for the good of the industry when they made this house possible.

Nor is it a face-brick proposition. The walls are of brick —common-brick backing with face-brick veneer. The partitions are of hollow clay tile. The roof is clay tile. The roadway is armored with paving brick.

Are you going to let this house stand silent, or give it a voice? Checks for generous sums, drawn to the order of the Panama-Pacific Clay Products Association, and mailed to Charles Bonner, treasurer, 301 Chamber of Commerce, Chicago, will prove excellent investments.

Be Your Own Safety Man

The "Safety First" Slogan Given Power and Forcefulness by Illustration and Printed Description in Steel Bulletin

BELIEVING THAT THE SAFETY of its men depends upon the individual carefulness of its workers, the Illinois Steel Company publishes a well printed magazine, in which the workers are the "models" for the illustrations. This is only one of the many departments of industrial safety work that are being promoted by this giant corporation.



Fig. 1. The Foreman is Looking

FEW PLANT MANUFACTURERS realize the great work that is going on in the industrial world, to bring about a better knowledge of the ideas that are epitomized in the slogan "Safety First."

One of the companies that form the United States Steel Corporation publishes a magazine, which is eagerly read by every man in its shops who can read English, and those who are deficient in our language find some one, as a rule, who will read it to them.

The illustrations, of course, need no translation. The subjects are familiar and the men who are shown in the pictures are, as a rule, fellow workmen. So, as the natural interest inspired by looking at pictures of familiar things is developed, the man receives a subconscious lesson in personal safety.

At the Gary (Ind.) works of the Illinois Steel Company, fire-brick are brought in by the carload. They are "hacked" very much in the same way as they were at the plant where they were made. The same problem confronts the ironmasters as is met every day, by the brick manufacturer. That is—the problem of the careless wheeler.

What better way is there of showing the result of this carelessness, than with pictures "posed" by someone that the men know? What better way is there of preventing accidents than by explaining exactly how they happen?

Under the title "The Best Safety Device Known is a Careful Man," the Illinois Steel Company's "Safety Bulletin" publishes the three pictures that are here used. Under them runs a story. It is:

"Phil is loading his barrow from the brick pile, in accordance with the foreman's instructions. Note the evenly trimmed load (Figure 1) the legs of the barrow securely set on the ground, and Phil's position, back of the barrow. His foreman is called away. In making up this load (Figure 2) Phil carelessly sets his barrow with one leg on the walk and the other on the ground. He piles too many brick on one side of the barrow. To make matters worse, he stands at one side of the barrow—just where he is sure to be struck if the barrow tips over. The last picture (Figure 3) shows the result of his carelessness."

The article concludes with a statement that ought to be printed and pasted up in every odd corner of your plant. It is:

"It is better to be careful a thousand times than to be crippled once."

On another page of the same "Safety Bulletin" is a group of men from the Joliet (Ill.) works of the same company. These men are shown wearing large celluloid buttons, which read "Department Safety Man." Each foreman appoints some one of the workmen under him, to act as a "safety overseer." He is supposed to be on the alert for dangerous conditions and practices and to report the same to his foremen. The men selected for these posts understand that an honor has been conferred upon them, in that their fellow workmen's lives are, to some extent, given into their keeping. They realize that with the honor comes responsibility, and up to this time, none of the "Department Safety Men" have given the Illinois Steel Company cause to regret the selection its foremen have made.

Some of this "Safety First" idea, applied actively in *your* plant, may save a hand, an arm, a leg or an eye—even a life. And for the hands, the arms, the legs and



Fig. 2. The Foreman is Called Away

the eyes—yes, even for the lives of the men whom you employ, *you* are responsible.

This responsibility ceases only when you have installed every possible device to safeguard the men on your payroll. And a part of that installation should be a personal interest in the safety of your men, made stronger by your inducing them to be "safety men" all through the working day.

Pan-American Road Congress

At the meeting of the Executive Committee of the Pan-American Road Congress, which was held in New York last week, the proposition of the authorities of the Panama-Pacific International Exposition to designate September 15 as Pan-American Road Congress Day was accepted. Progress reports of the subcommittees were presented.



Fig. 3. A Crushed Bone and an Enforced Vacation

Among the men who are prominently identified with the good roads movement, who will be asked to preside over the sessions of the Pan-American Road Congress, which will open on September 13, are Governor Charles W. Gates, of Vermont; Logan Waller Page, Director United States Office of Public Roads; Col. Wm. D. Sohier, Chairman, Massachusetts Highway Commission; George W. Tillson, Consulting engineer to the President of the Borough of Brooklyn, N. Y.; Fairfax Harrison, President, Southern Railway Company; James H. MacDonald, former State Highway Commissioner of Connecticut, and W. A. McLean, Chief Engineer of Highways and Commissioner of Ontario Public Roads and Highways Commission.

In addition to the presentation of topics covering practical problems connected with highway improvement, there will also be discussed such important subjects as "Determination of Justifiable Outlay for Individual Roads"; "Convict Labor for Road Work"; "Street Pavement"; "Reconstruction of Old Surfacing"; "Load and Tire Restrictions and Regulations"; "Motor Traffic: Its Development and Trend"; "Maintenance, Methods and Materials"; "Dust Suppression and Street Cleaning", "Uniformity in Highway Statistics and Data"; "Merit System in Highway Work"; "Essentials of Legislation Governing State Highways"; "Highway Indebtedness: Limitation and Regulation"; and "Educational Work of Highway Departments."

Col. Charles P. Light, field secretary of the American Highway Association, has been loaned to the Pan-American Road Congress until the close of the big meeting. It is expected that the Congress which is held under the auspices of the two leading road organizations of America, the American Highway Association and the American Road Builders' Association, will bring together representatives of the organized road movement throughout the entire United States and that it will have a large official representation from Canada and the Central and South American countries, many of which are taking a new interest in good roads.

A "Build With Brick" Exhibit in Utah



Parley N. Davis at the Utah Products Show

During the early part of April, a Utah Products Show was held in Salt Lake City, at which the Salt Lake Pressed Brick Company received second prize out of eighty exhibitors, which is "going some." The accompanying illustration shows the booth, and in it a very good picture of Parley N. Davis, sales agent for the state of Utah.

With characteristic hospitality Mr. Davis has extended his and the company's welcoming hand to all brickmakers passing through Salt Lake City on their way to or from the Panama-Pacific International Exposition, and says that he will not only be pleased to show them through the plant, but around Salt Lake City, which is well worth seeing.

The Salt Lake Pressed Brick Company is printing a small booklet called "Brick and Their Use"—a valuable addition to the literature of brick.

A New Detonating Device

The Actual Demonstration of Cordeau Gives Results That Must Appeal to Clayworkers Who Use Blasting Powder

THIS INTERESTING PAPER was read by its author at the Pittsburgh meeting of the American Institute of Mining Engineers, in October, 1914. *Later, it was printed in the transactions of that society, and discussion invited. It offers so excellent a suggestion to clayworkers, that "Brick and Clay Record" secured permission to reprint it.*

By Harrison Souder

THE OBJECT OF THIS PAPER is to bring to the notice of engineers a safety detonating fuse by the use of which misfires in blasting may be eliminated and safety in blasting operations promoted.

This new detonator is a French invention and is known as *Cordeau detonant* or detonating fuse and is sold under the name of Cordeau-Bickford. It consists of a lead tube 5 to 6 mm. in diameter, filled with trinitro-toluene.

While applicable to all classes of mining it will appeal especially to those who have to do with deep-hole blasting in open-cut mines or quarries, or any operations where a large number of holes are to be shot at one time.

Since the introduction of the deep-hole blasting in the Cornwall iron mines, much trouble has been experienced from misfires and many experiments were made to determine the best and safest method of blasting.

Before the introduction of the detonating fuse it was found that to insure the best results, two or more high-power electric exploders, not less than No. 6, with specially insulated conductors, should be placed in each hole; the holes wired in parallel, and for a large number of holes the current to be supplied by a live wire to the bus or lead wires at about the middle of the bench. The voltage in general use is 110 to 220, but as our material is a magnetic iron ore and the holes are generally damp, we found it advisable to reduce this to about 30 volts to prevent short circuits. A No. 7 or No. 8 special insulated detonator was adopted. But with the best of care and attention to the minutest detail, we were not able to eliminate occasional misfires and the consequent ever present danger of accidents.



Fig. 1.—The Ore Bench Before the Blast

In January, 1914, our attention was called to "Cordeau-Bickford" and we were invited to witness a trial blast with this material at the quarries of the Atlas Portland Cement Co. at Northampton, Pa. This was the first use of this detonating fuse in this country and as it marked a great advance in safety and economy in quarrying operations a brief description of this blast will be of interest.

The rock blasted was a cement limestone shale bench 94 ft. high (perpendicular) with the bottom well cleaned up. There were eleven 5-in. diameter holes, 26 ft. back from the face of the bench and spaced 13 ft. apart, 100 ft. deep and extending 6 ft. below the bottom of the bench. The holes were cleared of water just before loading. The charge was made up of 50 per cent gelatin and 40 per cent low-freezing dynamite, with the detonating fuse, 6 mm. in diameter, running to the bottom of each hole.

All the holes were connected with a line of detonating fuse to the end of which a single No. 6 detonating cap was attached. This was fired by a 220-volt current from a live wire. Instantly there was a sharp crack as the fuse exploded, followed by a rumble of the crumbling bank. The rock was thrown well out, leaving a clean wall or face.

The results of the blast were so satisfactory that we immediately ordered 1,000 m. of the detonating fuse for trial in blasting down our ore benches. This was the first application of this fuse to the mining of ore.

A trial convinced us of the wonderful adaptability of the detonating fuse to the purpose, and the simplicity and safety in handling brought a sense of relief and satisfaction. We, therefore, immediately adopted it for use in all our deep-hole blasting and stopped the use of the ordinary electric fuse except in shallow holes. We have been using the detonating fuse for five months and in this time we have made a dozen big blasts.

THE DETAILS OF THE SHOT

The details of a shot made on April 2, 1914, when 72 holes averaging 30 ft. deep were blasted at one time by means of the detonating fuse are given in Fig. 4. This is a copy of our standard blasting sheet and gives all information in compact



Fig. 2.—The Moment of the Explosion

form for future reference. Two No. 7 exploders were used and fired by current from live wire.

On May 20, we blasted 26 holes varying from 80 to 85 ft. deep and using in all 7,800 lb. of 40 per cent nitroglycerin dynamite with the detonating fuse, using two No. 7 exploders discharged by means of a battery. About 38,000 tons of ore were broken down.

Some views of the ore bench before, during, and after the blast are given in Figs. 1, 2 and 3.

The danger arising from the old method of blasting with electric exploders is exemplified by the only too extensive list of accidents due to premature explosions, misfires, etc. Such an accident as occurred during the construction of the Panama Canal in December, 1908, when 22 tons of dynamite exploded prematurely, killing 23 persons and injuring 40 others, would have been practically impossible if this fuse had been used.*

In addition to greatly increasing the safety of blasting, the detonating fuse has the additional merit of increasing the efficiency of the explosive charge.

To summarize, we may state that this fuse has three very important qualities, viz.: 1. It is safe. 2. It is instantaneous. 3. It increases the efficiency of an explosive charge.

1. *Safety.*—There is no danger in the handling or storage of the fuse. It cannot be exploded by friction, fire, or ordinary shock. It requires the use of a strong blasting cap properly attached to explode it. In blasting charged holes, the cap or exploder can be applied outside the hole, thus avoiding the danger of burned powder caused by side spit from ordinary fuse; also any risk of accident while tamping and the risk from a portion of an unexploded charge accompanied by a cap remaining in the débris from a blast is entirely obviated.

2. *Speed.*—The average rate of speed of this fuse is estimated to be close to 17,000 ft. per second, so that when it is used, the explosive charge is detonated instantly throughout its entire length, instead of at one point, as in the case with the blasting cap or electric exploder.

3. *Efficiency.*—It is known that the speed of an explosive decreases as the explosive wave travels away from the detonator. That the powder in a hole has the strongest explosive effect around the exploder is evident from an examination of the face of the bank after a shot. This can be demonstrated also by placing sticks of dynamite on the ground end for end, about 6 in. apart, with the cap in the first stick. The explosive force gradually lessens until it finally ceases to progress, leaving the farthest sticks unexploded.

By using this fuse the charge is detonated instantaneously throughout its entire length. This results in a saving of about 10 per cent of explosive, as determined by results obtained at Cornwall and elsewhere. It is not affected by heat, cold, or moisture, and lasts indefinitely without deterioration.

It is wound in continuous lengths on spools containing 100, 200, or 300 ft. each, and weighs about 7 lb. per 100 ft. It is accepted by transportation companies without restrictions except that it shall not be packed with other high explosives.

The method of applying the fuse is shown clearly by the accompanying sketches and instructions.

Fig. 5 shows how the holes are connected by the detonating fuse. The method of making connections between main and branch lines is shown in Fig. 6, and that of attaching

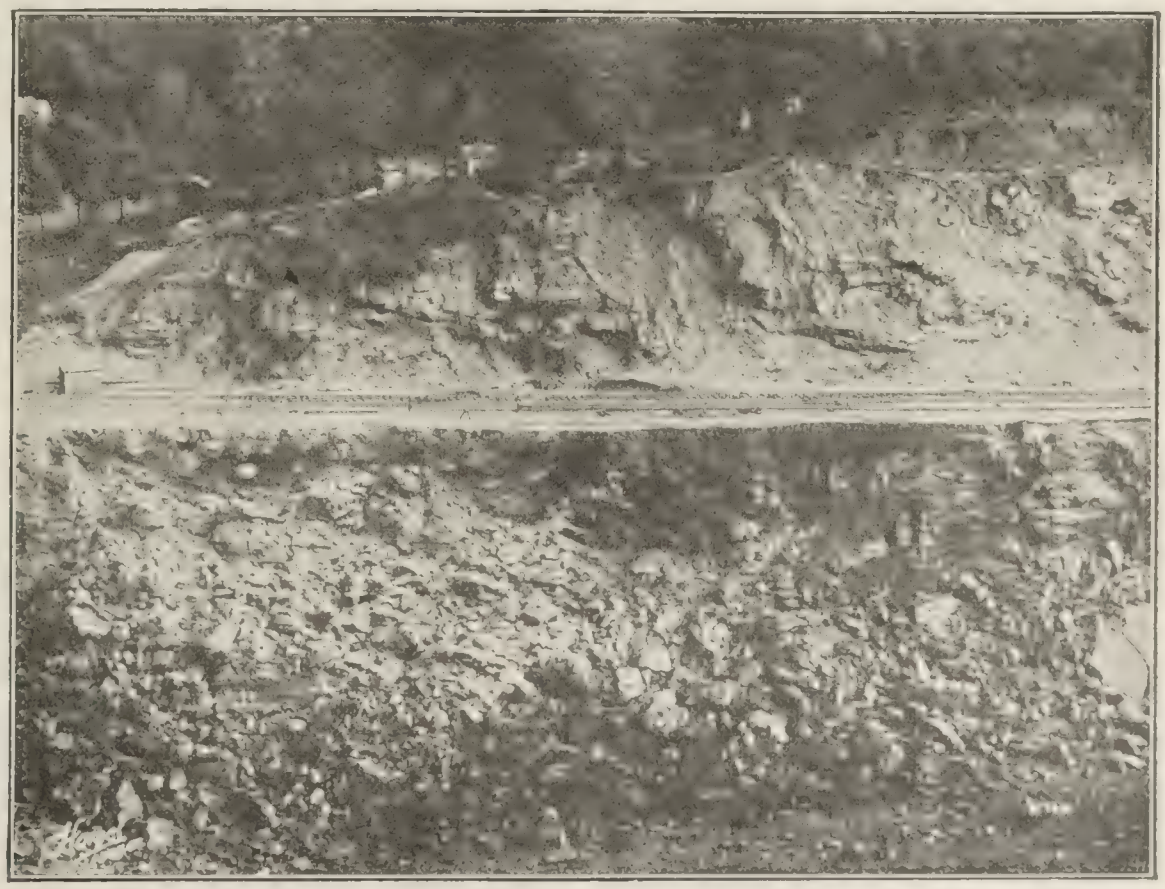
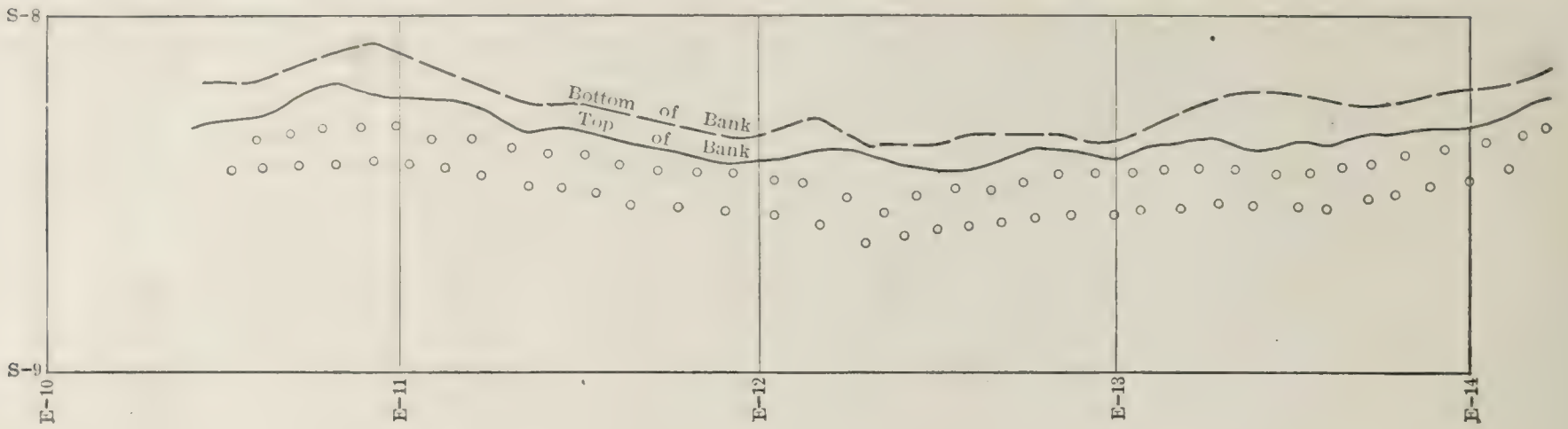
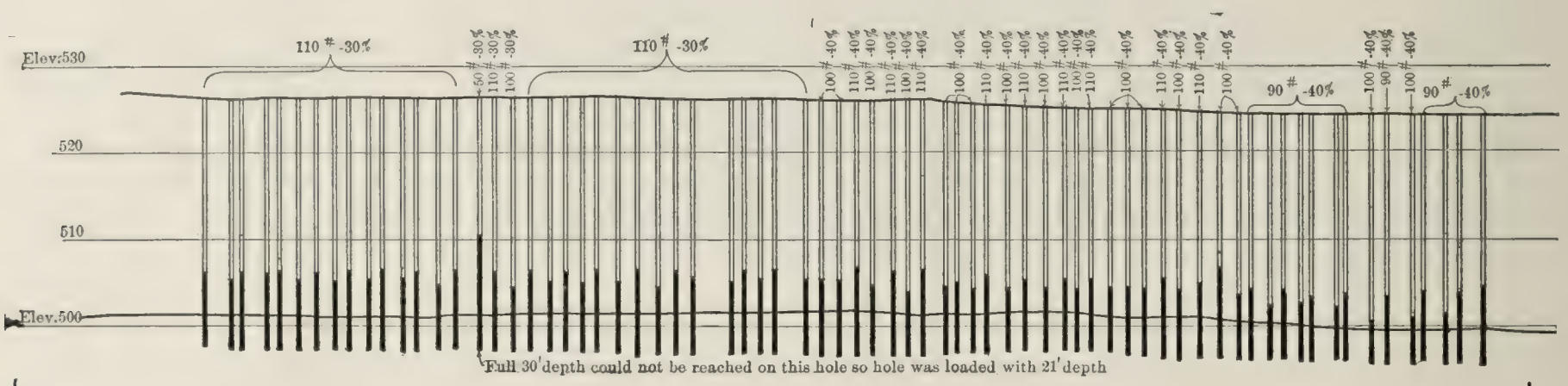


Fig. 3.—More Than Nine Thousand Yards of Material Moved

*See "The Panama Gateway," p. 337.





ORE WELL DRILL SHOT . . April 2, 1914 . . CORNWELL BANK COMPANY.

(Shot Fired with Live Wire, 2:55 P. M.)

Holes were all pumped dry by means of a 2-h.p. gasoline engine and sand pump, thereby letting powder to the bottom of the hole.

Seventy-two holes were fired—thirty-seven in front row and thirty-five in back row. The average depth of the holes was 30 ft.

The total cost of the material was $830.07—3,410 lb. 30 per cent; 3,870 lb. 40 per cent; 1,000 M. Cordeau used.

The amount of ore moved was 9,129 cu. yds. or 25,561 tons.

Cost 0.0909 per yd. or 0.0325 per ton.

Powder used = 0.8 lb. per yd. or 0.28 per ton.

East end of shot consisted of very bony ore and the holes were therefore loaded with 90 lb. 40 per cent, while the rest of the shot was rich, heavy ore, and 110 lb. 30 per cent was used, or 100 lb. 40 per cent.

All Cordeau and no exploders were used in holes.

Holes were all very wet. Majority of them were half full of water.

Better results were obtained by this shot than by any preceding one. Less powder was used. Bottom came out first.

Fig. 4. A Copy of the Standard Blasting Sheet Which Records the Data on the Shot Described in This Paper

the detonator to the fuse in Fig. 7. Either ordinary fuse and cap, or an electric exploder, can be used to set off the detonating fuse.

How to Attach a Detonator to the Detonating Fuse.—First, be sure the end of the detonating fuse is freshly and squarely cut off. If ordinary fuse is used, attach a cap by crimping it to the fuse in the usual manner. Next attach a union to the detonating fuse by crimping the end opposite the slit. Insert the cap in the slit end of the union till it comes firmly against the detonating fuse and then slip the ring over it to hold it firmly in place. Be sure the detonating fuse is cut off squarely and that the cap is firmly seated against it. A space of ⅛ in. between cap and fuse may be sufficient to cause a misfire.

Branch line *A* is joined to trunk line *B* by twisting the split ends, one to the right, the other to the left of the intersection. These joints may be protected from danger of loosening or breaking by winding with electric tape. This also protects them from moisture. This precaution is not necessary except where many connections have to be made or wet work is encountered.

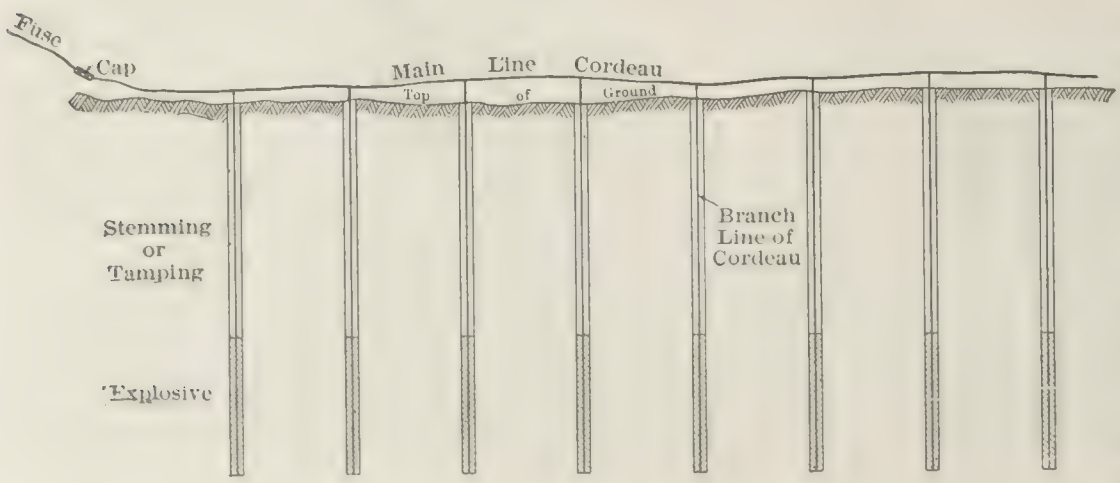


Fig. 5. Holes Connected by Cordeau

This operation is not difficult, but it is very important, and should be done carefully and in accordance with three simple rules.

1. Remember that it is the *branch* fuse that is to be slit and twisted about the *main* and never the opposite.

2. Be sure to make a firm joint.

3. At the point of intersection, be sure to lead the branch fuse away from the main at a *right angle,* at least for an inch or two. Beyond that curves and angles do no harm.

If the direction of the explosive wave is carefully borne in mind, there can be as many branches and sub-branches as are desired. To slit the end of the branch line an instrument

called a "cordeau slitter" is provided. It can, however, be done easily with a sharp knife. After slitting it for a distance of 3 or 4 in., separate the legs and, after placing the main snugly in the crotch, wind the legs about it, one to the right and the other to the left. If some of the trinitro-toluene is lost from the split ends, no harm is done provided the main is pushed firmly against the exposed material in the crotch. If many connections have to be made. it is possible that the handling and moving of the fuse may displace some of the connections first made before all can be completed. To guard against such an occurrence it is better to wind each joint with electric tape. This will hold them firmly in place. Before a shot is fired, the line should be thoroughly inspected. See that the branches leave the main at right angles. Be sure that they are all made firm.

On very large and important work where more than one main is employed, these mains may be joined together as a measure of precaution. This is done in the manner shown in Fig. 7 by cutting the mains and putting caps on the ends and then uniting them again by means of a brass sleeve, the ends of which are firmly crimped to the detonating fuse. Around these brass sleeves the ends of the connecting line are wound in exactly the same manner as when attaching a branch to a main line.

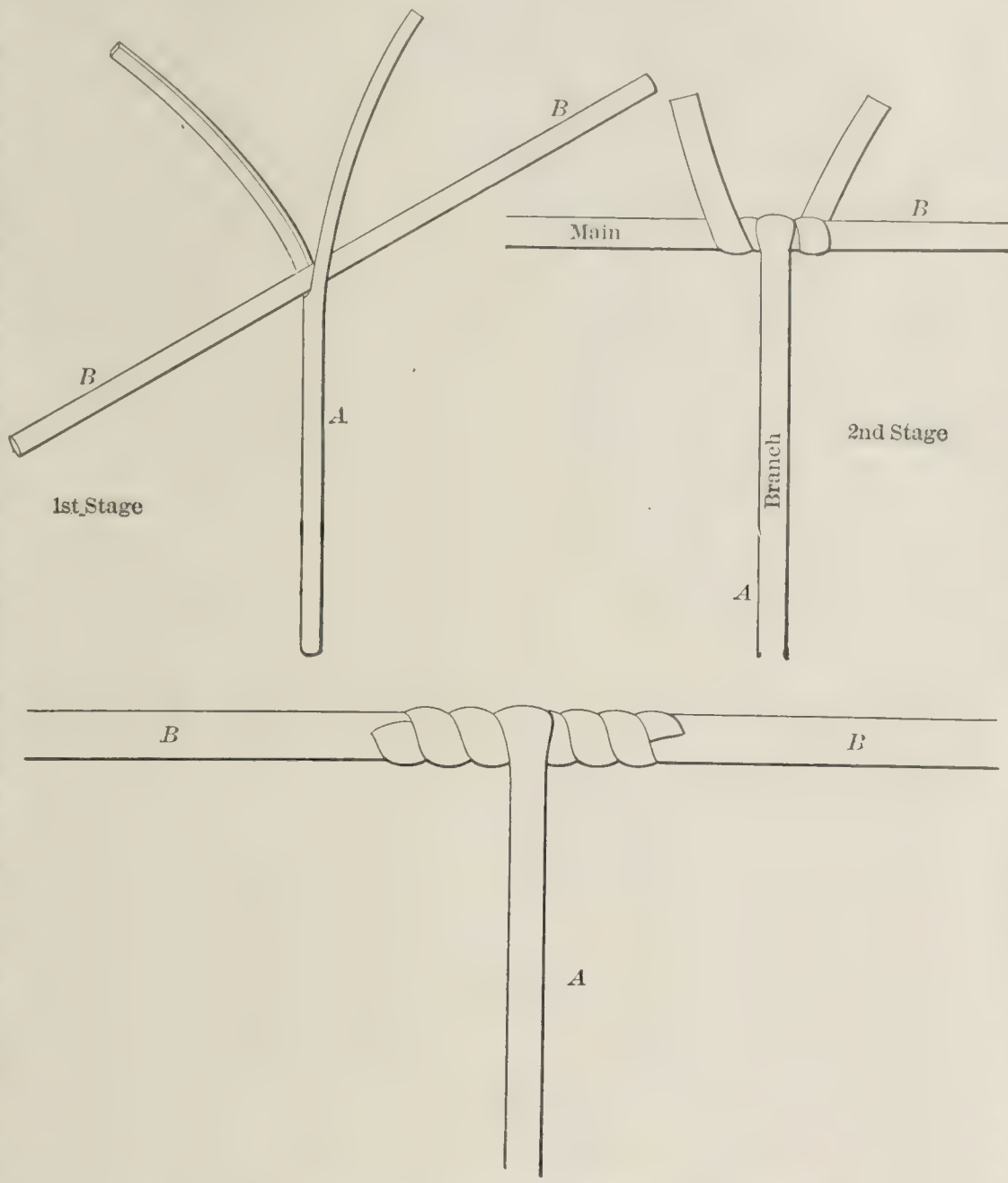


Fig. 6. Method of Connecting Main Line and Branches

Interesting details in regard to the use of this detonating fuse in France and Belgium may be obtained from the following articles, of which, for convenience, the writer has made a brief digest, viz.:

Commission du Grisou: Note sur l'amélioration de la sécurité dans les mines grisouteuses par emploi d'un nouveau dipositif d'amorçage des explosifs. *Annalec des Mines,* 10th ser., vol. xii, p. 169 (1907). An investigation to determine whether the use of detonating fuse would increase safety in gaseous mines. Describes numerous tests and experiments and concludes with the following statement of the advantages of the detonating fuse:

ADVANTAGES OF FUSE FOUND BY EXPERIMENT

1. No misfires, partial explosions, or burning of powder.
2. Allows reduction of powder charge. Estimated at 20%.
3. Permits the use of explosives of very low sensitiveness.

Nouvelle Application du Cordeau Détonant aux travaux publics, by L. Barthelemy. *Bulletin de la Société des Ingénieurs civils de France,* November, 1910, p. 492. Describes the successful application of detonating fuse in the destruction of a 318.6-m. masonry tunnel on the Ypres canal in Belgium.

Shot 2,125 holes simultaneously. The charge was 3,250 kg. of melinite. The delicate part of the operation was to find a way to explode all of the holes at once. The first use of detonating fuse on a large scale.

Note sur le Cordeau détonant, by M. Fougerolles, Chief Engineer. *Comptes rendus mensuel de la Société de l'Industrie minérale,* February, 1908, p. 58. Description of tests made by Cia. des mines de Lens with permissible explosives and detonating fuse.

Conclusions: Compressed powders practical with easily observed precautions.

1. Be sure the hole is of large enough diameter to permit the charge to be forced tightly to the bottom.
2. Make a fresh clean cut at end of the detonating fuse, and place it in contact with the exploder so that it cannot slip away while loading the hole.

No unexploded powder was found and it is claimed 20 per cent of the explosives by weight and 10 per cent of expenses were saved. Detonating fuse is well liked by the miners using it.

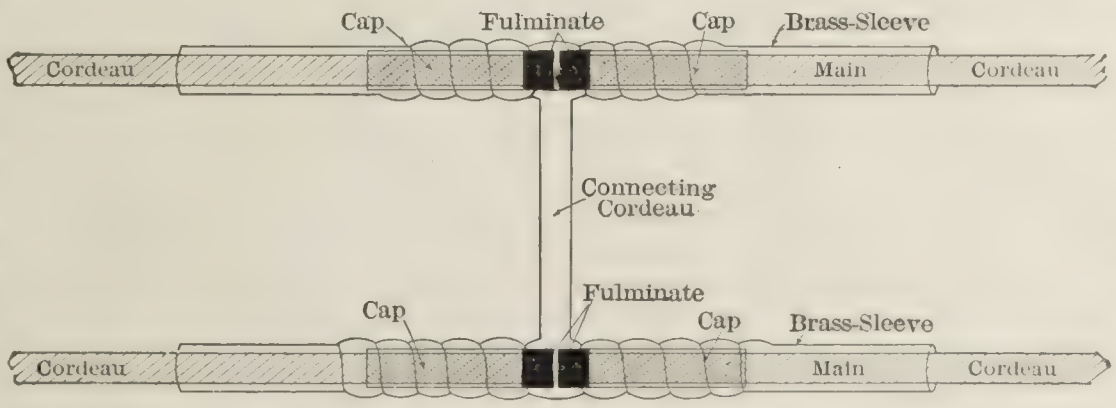


Fig. 7. Connecting Cordeau is Split and Wound Around the Brass Sleeves in the Same Manner as When Making Joints

L'Exposion du Rocher de Formery. *L'Illustration,* May 31, 1913. Illustrated description of the removal of a large mass of rock, overhanging the village of Formery in France, by blasting at one time 237 holes loaded with 92 per cent nitroglycerin dynamite.

Questions and Answers

Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Wants to Change System of Burning

667. *Utah—We are planning a change in our system of burning and expect to build down-draft kilns to take the place of our present equipment, which is up-draft. We manufacture both wire-cut and dry-press brick and farm drain tile. In our new equipment we will, in all probability, include machinery for the manufacture of hollow building blocks. Will you refer us to someone who designs a kiln that would take care of our products and give satisfactory results? We are somewhat impressed with the picture of the kiln and the methods of bracing which appeared in your issue of April 6 on page 654. It was marked "Figure 15." Can you tell us at whose plant this kiln is located so that we can take the matter up with the owners and see what success they have had regarding even burns on this style of kiln? Any other information regarding the erection of a kiln to suit our purposes will be greatly appreciated.*

Considering the fact that you will use your kilns for the making of several very different kinds of ware, we believe you will get better results by using round down-draft kilns than those of the rectangular type. This question has been the subject of controversy for a great many years but we believe we are warranted in making the statement that where the same kiln is to be used for burning more than one kind of material, better results are obtained in the round type than in the rectangular. The round down-draft kiln does not hold as many brick as the rectangular kiln does but the cost of up-keep is less and the results somewhat more exact. The type of flue and method of draft in any kind of kiln that may be adopted will, to a large extent, determine what percentage of ware you can get out of the kiln. At the same time, the floor that would be suited for burning brick (which needs sanding) might not be especially adapted for the continuous burning of hollow ware, without making some provision for the proper setting of the latter—a provision which would have to be made each time the kiln was turned.

The care with which a kiln is built has a great deal to do with its results and if the walls are not properly constructed and bonded and braced, the life of the kiln will be short and the condition of the burned ware not so satisfactory as it would be if the kiln were correctly built. The encasing of kiln walls on a round type of kiln by a steel shell extending from the top to the bottom of a kiln is one way of insuring against the loss of heat through radiation—a condition which is increased by the cracks in the kiln walls, due, frequently, to bad construction. Our investigation has proved this type of construction to have a great deal of merit and the steel shell kiln is confidently recommended to our correspondent's attention.

The kind of fuel which you will burn and the requisite area of grate surface, the size and the height of stack, should be gone into very carefully before you finally decide upon the fundamentals of your new construction.

The Fredonia Brick Company of Fredonia, Kansas, which makes face-brick and wire-cut commons is now changing over to down-draft kilns and these are all round kilns. Why not write to some of the men or firms that make a specialty of kiln building and whose advertisements appear in the columns of this magazine?

Regarding the rectangular kiln which is shown in the article published in our April 6 issue, we suggest that you write direct to Profession Harrop at the Ohio State University, Columbus, Ohio, who has this information.

Wants Data on Hollow Building Tile

674. *Minnesota—Will you kindly advise us where it will be possible for us to secure data showing the carrying capacity of ordinary hollow tile, as used in wall construction? We do not refer to any particular manufacturer's product or any of the so called load-bearing tile, because we could secure the information that we want from the manufacturers. The information we are looking for is the carrying capacity that is usually figured as being safe for ordinary common hollow tile of good hard burned material, as estimated in good architectural practice.*

The above question is referred to our readers. The Bureau of Standards is making tests on hollow tile which, in time, will be ready for the public. The tests are confined, however, to one particular manufacturer's output and as such, may not be of as much general interest as would attach to them if they were being made on "average" tile, such as any plant which had the proper clay could make without paying royalties on patents.

"Brick and Clay Record" would be very grateful for any information which our readers may send as to the "carrying capacity that is usually figured as being safe for ordinary common hollow tile of good hard burned material, as estimated in good architectural practice." The information thus given will be very much more valuable if accompanied by information as to the authority.

Cement Joints in Clay Sewer Pipes

670. *California—What reply can we make to the statement which we have underscored in the enclosed advertisement relative to the use of cement for joints in sewers constructed of burned clay pipe?*

The underscored paragraph, in the advertisement which our correspondent enclosed, reads as follows:

> And if sewage is so dangerous to cement, how about the cement joint that occurs every two and a half feet in all clay pipe sewers? It is useless for them to say that the sewage does not come in contact with the cement mortar at the joint. Just look in any sewer and see for yourself.
> Any sane person watching sewer construction will see that

the joint which occurs every once in so often in clay pipe is made up of neat cement and is protected by the burnt clay of the pipe itself; that is, it is protected in everything but a very small part of the joint. In this it is very much like the joint between brick, and in laying ordinary common-brick, a mortar joint that is one-quarter-of-an-inch thick is actually eight cubic inches in volume, where the brick used measures eight by four inches on the bed. When the brick and the joint is exposed to fire or to any other condition which might produce a chemical change in the mortar joint, a surface which only amounts to two square inches is exposed; that is, the surface of the joint is but one-quarter-of-an-inch thick by eight inches long and it is only the surface which is exposed.

In the same manner, it is only the edge of the joint in the sewer pipe that is exposed to the chemical action of the sewage. In the making of cement pipe, neat cement is out of the question on account of the cost and the mixture which is used to make the pipe is very different from the mixture which is used to make the joints in sewers constructed of burned clay pipe.

Cannot Raise Heat in His Kilns

666. *Iowa—I have two round down-draft kilns which I have burned once. They have open fire boxes—that is they have no grates. They have large flues connected to a fifty foot stack which stands between the two kilns and which is only about six feet away from them. We are using "Enterprise" lump coal, which is mined in Iowa and which burns good in all other styles of round kilns, and I have never before had trouble in raising the required heat—that is until I tried burning the two kilns which I have mentioned. We seem to have an abundance of draft and the fires roar until you can hear them for quite a distance. These are new kilns for me and I may not be handling them correctly. I saw in a recent issue of "Brick and Clay Record" an answer to one of your correspondents who wanted to know about open fire kilns and I tried checking the draft as suggested in your answer to him. When I did that, however, the coal would not burn. We set the brick cross-way in benches three brick wide and have a two-inch flue from top to bottom between every bench. Is this the right way? I burned these two kilns for five days after the water-smoke was off and even then the face-brick were very soft, and there was only a medium burn on the common-brick. Can you answer me by letter and give me some pointers about the proper plan to handle this style of kiln? The main trouble is that I cannot get the kilns hot.*

The probabilities are that the opening into the furnace above the bed of coals is too large and the bed of coals too thick. This would cause a surplus of cold air to be drawn into the kiln over the fires instead of through the bed of coals as this air will, of course, follow the path of least resistance. The remedy is to keep the fires clean and to keep the bed of coals as thin as consistent, firing light and often, also to provide a smaller opening in the opening over the fire, by banking the coal higher. This permits the furnace to "breathe" or draw the air through the bed of coals and this supports combustion. It may be possible that in this process the furnace will become too hot and this must be regulated by the amount of fuel and frequency of fire as well as by the size of the opening over the fires. Regarding the setting—do not set with a two-inch flue between the benches but set the benches tight together and set the brick "five on two." Do not set too high in the kiln but leave three to four (or more) feet between the top of the setting and the kiln crown.

The reply given to "651 Illinois" in the April 20 issue of "Brick and Clay Record" has evidently been read by the correspondent whose question we are now attempting to answer. We recommend that he read that reply again, particularly paragraphs (A), (B) and (C) and not to lose faith in the methods suggested there on account of one unfortunate experience. The chances are that the draft was cut too much and went, of course, to the opposite extreme. The draft should be of such strength that the fuel burns freely, but the fires should never "roar."

Burned Clay vs. Galvanized Culvert Pipe

661. *Georgia—Will you tell us where we can get literature to be used in a fight which we are making against galvanized culvert pipe?*

We regret that we are unable to help you in this matter, not knowing of any printed matter on the subject mentioned. We take this occasion to appeal to our readers for help. If any of them have made clippings from articles which could be used to further the cause of burned clay against galvanized culvert pipe, we would be glad to learn the names and dates of publication of the periodicals which contained these articles. We would also like to hear from our readers who have had any experience along the line mentioned and to receive letters or articles from them which give good reasons for the advocacy of burned clay pipe, particularly as opposed to galvanized iron.

Wants Salt for Glazing

672. *Georgia—We would like to have the address of parties at the nearest points to us from whom we can obtain rock salt or any other salt for glazing, and will greatly appreciate it if you can give us this information.*

The International Salt Company of Atlanta, Georgia carries salts at the ports and probably has some second quality salt which is suitable for the purpose of glazing. The Myles Salt Company, Ltd., of New Orleans, La., would also be in a position to make prices, as well as the Colonial Salt Company of Akron, Ohio. We are under the impression that you have made an error in suggesting "rock salt" as we do not believe that you will have any success in using this particular kind of salt for the purpose of glazing sewer pipe or other clay products.

Wants Kiln to Burn Crude Fire Clay

669. *Pennsylvania—Can you give me information relative to a kiln adapted to burning crude fire clay? I do not see anything of this kind advertised.*

We do not know of any place where a special kiln has been erected for the above named purpose but would refer our correspondent to the "Questions and Answers" department in the last issue of this magazine, wherein a brickworks' engineer suggested a style of construction which is not unlike that of a steelworks' cupola. A sketch was given which will, we are sure, interest everyone who has to contend with the problem of calcining fire clay.

Who Makes a Thin Veneering Brick?

665. *Ohio—Will you kindly advise, if you know, and if you don't know, will you try to find out, where the little veneering brick, with a special groove to fit a special sheeting is manufactured? It is about one-inch thick, by eight-and-a-quarter by two-and-a-quarter inches.*

This question has been presented to several large face-brick dealers, and none of them will own up to ever having seen a brick of this kind. With "Brick and Clay Record" readers assist this department by giving the information requested?

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Approximate Cost of Brick Mill Buildings (Kent)

Charles T. Main, in "Engineering News," January 27, 1910, gives a series of diagrams of the cost in New England at that time per square foot of floor space of different sizes of brick mill buildings, one to six stories high, of the type known as "slow-burning," calculated for total floor loads of about seventy-five pounds to the square foot. Figures taken from the diagrams are given in the table below. The costs include ordinary foundations and plumbing, but no heating, sprinklers or lighting.

Cost of Brick Mill Buildings per sq. ft. of Floor Area

Length, feet.	50	100	150	200	250	300	350	400	500
One Story.									
Width 25 ft.	$1.90	$1.66	$1.58	$1.54	$1.51	$1.49	$1.48	$1.47	$1.46
50	1.52	1.29	1.21	1.18	1.16	1.15	1.14	1.13	1.13
75	1.41	1.21	1.12	1.08	1.06	1.04	1.03	1.02	1.02
125	1.32	1.09	1.02	0.98	0.96	0.94	0.94	0.93	0.92
Two Stories.									
25	2.00	1.62	1.52	1.47	1.44	1.41	1.39	1.38	1.36
50	1.50	1.21	1.13	1.09	1.06	1.05	1.04	1.03	1.02
75	1.34	1.08	1.01	0.97	0.94	0.92	0.92	0.91	0.90
125	1.22	0.97	0.90	0.86	0.84	0.82	0.81	0.80	0.80
Three Stories.									
25	1.98	1.57	1.47	1.42	1.39	1.38	1.36	1.35	1.34
50	1.47	1.17	1.07	1.03	1.01	1.00	0.98	0.98	0.98
75	1.30	1.05	0.98	0.94	0.91	0.89	0.88	0.87	0.86
125	1.18	0.93	0.86	0.82	0.80	0.78	0.77	0.76	0.76
Four Stories.									
25	2.00	1.61	1.50	1.45	1.42	1.40	1.38	1.37	1.36
50	1.38	1.17	1.10	1.05	1.02	1.00	1.00	0.99	0.98
75	1.32	1.08	0.97	0.93	0.90	0.88	0.88	0.87	0.87
125	1.20	0.93	0.85	0.81	0.78	0.77	0.76	0.75	0.74
Six Stories.									
25	2.10	1.72	1.57	1.51	1.48	1.46	1.44	1.43	1.42
50	1.53	1.21	1.12	1.08	1.05	1.04	1.03	1.02	1.02
75	1.35	1.08	0.98	0.94	0.92	0.90	0.89	0.88	0.86
125	1.22	0.96	0.86	0.82	0.79	0.78	0.77	0.76	0.76

The cost per square foot of a building one hundred feet wide will be about midway between that of one seventy-five feet wide and one a hundred and twenty-five feet wide, and the cost of a five-story building about midway between the costs of a four and a six-story building.

The Care of a Chain

Of course, a chain "will wear like iron," but even iron has its limitations. Recognize these, and bestow a little care upon a chain, and it will do better work and live longer.

For instance—sometimes, after much use and through sudden shock, or frost, the iron will crystallize, and lose its fibrous quality; therefore, its tensile strength will be lessened. The remedy is annealing. Every chain subjected to rapid changes of temperature or shock should be annealed occasionally.

It may be that a chain is subjected to a greater degree

of wear in some parts than in others. In such cases, when links become too much worn, they should be taken out and others inserted. No matter how good the rest of a chain is, one weak link reduces the strength of the whole.

Chains working over wheels should be greased once in a while so that the ends of the links may secure the best possible bearing and reduce friction. When putting on a new chain, run out the dipper or scoop a few times, to loosen scale on inside of links, then apply chain grease (hot) with brush; after oil is cool, run the chain out and in slowly, to work grease thoroughly into the seating of the link and prevent grease from being thrown off. This method will lengthen the life of the chain.

And when such chains are used in hoisting, especially where life depends upon strength, they should be annealed at least twice a year, if worked under cover; sometimes oftener, if left out in the open, in frosty weather. They should also be kept well oiled.

Again, no chain should ever be required to do more than it is intended to do. Every time a chain is subjected to a greater strain than its test indicates it is weakened. A chain will stand about twice as much strain as its test before it breaks, but good judgment will never allow it to go anywhere near the danger point. Working capacity of a chain should never exceed two-thirds of the proof-strain, and will give better results if used at not over one-half of the proof-strain.

When these rules are followed, the user secures the greatest amount of value from his purchase.

Preventing Leaks in Steam Pipes

One of the commonest causes of leakage in steam pipes, is the failure to make allowance for the alterations in length which must occur in all steam pipes. The length of pipe frequently used in brickworks will vary by more than an inch each time the steam is shut off, and unless proper allowance is made for this amount of movement in the pipes there is sure to be a leakage, as the force of the expending or contracting metal is very great. The use of one or more expansion joints will only obviate the difficulty if the pipes are supported loosely on the hooks and other supports; the commoner method of fastening the pipes tightly with screws or bolts at each point of support, largely nullifies the effect of the expansion joints, for the latter is only useful between the two fixed points on the pipe nearest to the joint.

The passage of a steampipe through a wall is a simple matter, which is usually carried out in a slipshod manner. To prevent the pipe leaking, it must have full freedom to move in the direction of its length, but this is impossible if the pipe simply rests on rough brickwork. What is necessary, is that the brickwork should be made smooth, an iron plate fixed over it, and a small piece of 1 in. pipe laid crosswise to the steam pipe. The latter rests on the short piece of pipe, which acts as a roller and reduces the friction when the steam pipe moves under expansion or contraction. This arrangement has the further advantage that the iron plate can be packed so that the pipe rests on it without any strain—a matter difficult to arrange when the pipe merely rests on the brick or stone-work of the wall.

The effects of expansion are still more serious when the pipe passes through a wall and then turns almost at right angles and follows parallel to the wall. The only remedy in such a case, is to allow ample clearance in every direction. This necessitates a large hole in the wall through which the pipe passes, but this is unavoidable, though its effects may, to some extent, be overcome by attaching a light sheet of metal to the pipe so as to cover the hole and yet allow the pipe to move freely.

The brackets or other supports for the pipes should be of such a shape as to present the smallest possible area in contact with the pipe. A broad support will impede the expansion and contraction movements of the pipe in proportion to its breadth, and will not prove so satisfactory a support as the use of a movable roller made of one-inch pipe, as the latter will allow the steampipe to move freely with little friction. In several works recently visited by the writer, serious leaks, which had often been troublesome, were cured by altering the brackets on which the pipes were carried, so as to give the pipes a sliding freedom on small rollers made out of old pipes cut into short lengths and mounted above the brackets already in use. It was then found that the original brackets had caused so much friction between the pipe and its support, that the free expansion movement of the pipe was prevented, and all the strain was thrown on the flanges, which could not be kept steam-tight. Where the length of pipe is short, the effect of a fixed or roller support is less noticeable, but where a pipe runs the whole length of a drying shed, or across workshops, in order to convey steam to another building, it is very important that nothing should hinder its longitudinal movements.

Where a roller bearing appears to be impracticable, some effort should be made to facilitate the movements of the pipe by making the surface of support as smooth as possible. In some cases, a piece of glass or polished stone, laid on the bracket, has proved very efficient.

Even when the pipe has been given free movement on its supports, it is necessary that one or more expansion joints should be provided, so that alterations in the length of the pipe may not affect the strain on the joints. The usual form of expansion joint is a U-shaped bend, the length of the U being about ten times the diameter of the pipe. As the pipe expands, it makes the two parts at the top of the U approach each other, so that all the strain is thrown on the bent portion of the pipe, where there are no joints, and, therefore, no chance of leakage. Such a joint costs very little, and saves many leaky pipes, so that it soon repays for itself. The more complex expansion joints sometimes used are quite desirable for pipe lines, under some circumstances, but the simpler one, described above, is sufficiently good for most brickworks.—"Brick and Pottery Trades Journal."

Tight Belts

Fully seventy per cent of the trouble that comes to the average plant through broken pulleys, hot-boxes and the like, is caused by one thing—a tight belt. The placing of an enormous and, at the same time, useless pressure on the pulleys wears out the wooden splits and, in time, breaks them. At the same time, it causes hot-boxes, and hot-boxes cause delays that are as vexing as they are costly.

The average plant can reckon on a loss of from fifteen to twenty per cent of its power, in transmission. Some have less and many more. The ones that have the most are those that have tight belts.

It is well to look over your transmission, and see the way your belts look when in motion. When the belt is working, the returning side should have an undulating motion, which is proof that there is no more strain on the pulleys and shafting than is necessary to transmit the power.

Suggestions Wanted

Since January 1, when the idea of printing tables of information for clay plant superintendents was started, ten of these have been printed. Some of them we have been told, have been very valuable—others not so much. We will be glad to receive suggestions. Is there anything that you have to figure out, each time you come to it, that could be expressed in a table and so save time?

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Suggests a Higher Education for Young Architects

An excellent suggestion comes from N. P. O'Neal, of the Hope Brick Works, of Hope, Ark., with relation to the education of architects, whose practice has not brought them into intimate acquaintanceship with brick. He says—but read for yourself.

While it is a fact that we brickmakers are all handicapped by not knowing exactly what our material costs, and by being compelled to set our selling price by what the market will pay, rather than by what it should pay, we are still more severely handicapped by the lack of knowledge that marks the general public, and particularly the architect of small practice. Few of the smaller architects seem to have any knowledge of the comparative cost of brick construction, as against frame, but state that brick costs a "third-again-as-much" or a "half-again-as-much" over and over again—parrotlike.

Now since most of the low-cost dwellings in the country are planned by these smaller architects, it seems that the brickmakers could well afford to consider some plan for *the education of the architect of limited practice*. An architect friend of ours, a day or two ago, said "There are a thousand and one things entering into the cost of a brick house beside the brick walls, that serve to run the cost up." A statement of this kind, made by a man who is friendly to us, yet believes he is right, must be typical. That is, it must be the impression of hundreds of other architects, all of whom have a great deal to do with the selection of material. If we can bring them to see that our idea of a "brick" house is a house with brick exterior walls, instead of frame and clapboard walls, with every other detail of construction the same as the construction of a frame house, our claim that brick is cheaper than frame (upkeep considered) would bear fruit. The trouble is, architects do not understand what we mean when we speak of a "brick" house.

The trouble is that none of us know what we mean when we speak of a "brick" house—that is, none of us know whether what we mean is what the other fellow means, who makes the same claims for his "brick" house as we make for ours. It might be well to say that, in this instance, a house with solid brick exterior walls is meant; that will support a great many of the claims that are made for brick—it is beautiful, economical, slightly more fire-resistant that an all frame house, is not "cooler in summer and warmer in winter"—necessarily—than a well-built frame house, but has a look of solidity than no frame house could have. It will not need painting, and, if the brick are well made and well laid, will look well a great many years, long after a frame house would have suffered great deterioration, unless its protective coat of paint was renewed with great frequency.

Farm Paper Commends "Reaching the Farmer"

When "Brick and Clay Record" began the publication of a series of articles designed to increase the use of burned clay in farm buildings and in the improvement of farm lands, it expected that the series would be taken very kindly by the publishers of agricultural papers, since the lesson "Brick and Clay Record" sought to teach was the lesson of publicity through the journals that reached the greatest number of buyers. It is with some satisfaction, therefore, that we print the following letter from H. E. Young, editor of "The Farmers' Review" on influential farm journal, published in Chicago. Under date of May 6, he writes:

I have noted some of the articles which you have been using on "Reaching the Farmer" in "Brick and Clay Record" and wish to compliment you on them. It seems to me that these articles have been very well conceived and executed. They are certainly very timely and should be worth a great deal to manufacturers of clay brick who will take them seriously and benefit from the advice suggested. There is no question but what clay brick manufacturers are missing a great opportunity not only to increase their business but to hold the trade they already have, especially if they do not let the public know more about their products and their advantages.

Clay brick will continue to be used if the public's attention is directed to their use. What the industry needs more than anything else is a broad gauge publicity campaign and manufacturers generally should get together and let people know the facts about their products.

The articles which you have published should help materially in awakening the interest of the manufacturers to the need of just this kind of aggressive action. You have handled the subject in a very comprehensive way and the emphasis which you have given this incalculable need should soak in and result in much good to the industry which your excellent publication represents.

It is the earnest wish of every man connected with "Brick and Clay Record" that the idea of a real publicity for burned clay should "soak in" as our brother of the pen has written. The idea of the "Reaching the Farmer" series was to give a line of direction to the publicity. When the day comes in which burned clay will do something for itself that is worthy of the industry, there will be some division. Either it will be publicity for brick, and against everything else, including other burned clay products, and a similar publicity for hollow building tile, *and against everything else, including brick*, or it will be all sorts and conditions of fire-resistant building materials, against frame. If that is to be the outcome, then the direction will be divided—the campaign will be conducted in one way to reach the builder of homes, in another way to reach the builder of silos, barns and farm appurtenances. All of this preliminary writing is to clear the atmosphere, so that when there is a fund to spend, the way to spend it will be settled.

Believes in a Publicity Bureau

It is some time since "Brick and Clay Record" has had the pleasure (or of its readers' reading) a screed from the trenchant pen of C. B. Platt, of Van Meter, Iowa. It was Mr. Platt who suggested the series of articles so recently completed in this magazine, on the market that there is for clay products on the farm, and on the way to develop that market. What Mr. Platt has to say on the subject will,

therefore, have peculiar interest. His letter is dated May 3, and reads:

In your "Reaching the Farmer" articles you show that you have been giving the subject careful study and have arrived at conclusions worthy of anyone's careful consideration.

In your last chapter, in the issue of April 20, you make it very clear that we have a wonderful field for exploitation, and yet that there is a wonderfully strong chance for entering this field as a brass band without instruments but with banners flying. Advertising, as you surely well appreciate, is *sight* and *sound*. The sight impressions must make a noise in the brain of the reader in order to prove profitable to the printers of the banners.

I agree with practically all you have said in these articles and regret, as the suming up would seem to indicate, that you have probably brought them to a close.

You have offered arguments in favor of the bureau idea which are uncommonly sound and convincing; reasons which are basic and which should appeal and which, if followed, will bring the results sought.

I can not make myself believe that any individual clay products manufacturing firm can afford to make a noise in the brains of the readers of the farm papers which will really be the right sort of a noise, or a noise calculated to actually increase the demand for clay products by stirring up in the farmer and small town dweller a desire to make really permanent improvements.

As advertisers our efforts are, first of all, important as educational; as such they are most assuredly associational in scope and best made through a bureau in charge of a man who is capable of giving subscribers thereto such assistance and advice as will make his individual, as well as associational, efforts toward publicity for clay products profitable.

I think that your article in the April 20th issue of "Brick and Clay Record" shows clearly what the benefits of a bureau are and where they may be found, as well as how.

More than one worker in burned clay has reason to thank Mr. Platt, who, being willing to take his pen in hand, to suggest, watches, helps and advises those who are so placed as to be able to make use of his good suggestions, his help and his guidance. For many years, Mr. Platt has championed the cause of burned clay, in the columns of this and other magazines. And this has not been done for hire.

The industry is to be congratulated upon its good fortune in having on its roster a man who can write, and who is willing to give his best to the industry he ornaments.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

A BRIEF has just been filed with the Interstate Commerce Commissioners by O. M. Rogers, on behalf of the American Enameled Brick and Tile Company, of New York City, in their case, No. 7515, against the Raritan River Railway Company, et al. A brief has also been filed, since our last issue, by the railroads involved in case No. 7541, of the Chattanooga Sewer Pipe and Fire Brick Company, of Chattanooga, Tenn., against the Southern Railway Company et. al.

The Standard Vitrified Brick Company, of Coffeyville, Kan., has entered a complaint with the commission against the Missouri Pacific Railway Company and the Chicago, Burlington and Quincy Railroad Company. In this case, a shipment of twenty-two carloads of brick was made between September 14 and October 1, 1914, according to the complaint from Coffeyville, Kan., to Seward, Neb. The haul from Coffeyville to Kansas City, Mo., was made over the lines of the Missouri Pacific. The rate charged from Kansas City to Seward was twelve cents per hundred pounds. It it stated in the complaint that at the time of the shipments, the Missouri Pacific had in effect a rate of ten and one-half cents per hundred pounds to Seward via Omaha, Neb. The brick company asks for reparation for the difference in the rate as charged and the rate via Omaha.

A complaint has been filed by the Coffeyville Brick and Tile Company, of Coffeyville, Kan., together with brick plants located at points in Kansas, Oklahoma and Arkansas, against the St. Louis and San Francisco and the St. Louis, San Francisco and Texas Railway, in which it is claimed that a rate of eleven cents on brick in carloads from Boynton, Okla., to Denison, Okla., Dallas and Paris, Texas, is unreasonable and unjust. The shipments involved, sixty-seven cars in all, moved during March, April, May and June, 1913. Since June 23, 1913, the rates have been six cents to Denison, seven and one-half cents to Dallas and eight cents to Paris and Boynton. The brick company asks for rates proportionately less from Boynton in accordance with its natural location as to distance. Reparation is asked for $1,927.25 with interest at six cents from August 1, 1913.

The commissioners have just handed down an opinion in case No. 6726 of the C. W. Hull Company, of Omaha. Neb., against the Missouri Pacific Railway Company, et al. They say in part: "Charges collected by defendant for the transportation of brick in carloads from Council Bluffs to Manawa Switch, Iowa, as part of a through movement from Fredonia and Gas, Kan., not found to have been unreasonable. Complaint dismissed."

(*Continued on page* 989)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

A Shovel Without a Fireman

The Thew Automatic Shovel Co., Lorain, O., has perfected and tried out successfully a gasoline power driven shovel. The company has an enviable reputation as manufacturers of steam and electric shovels and now add the gasoline shovel to complete the list.

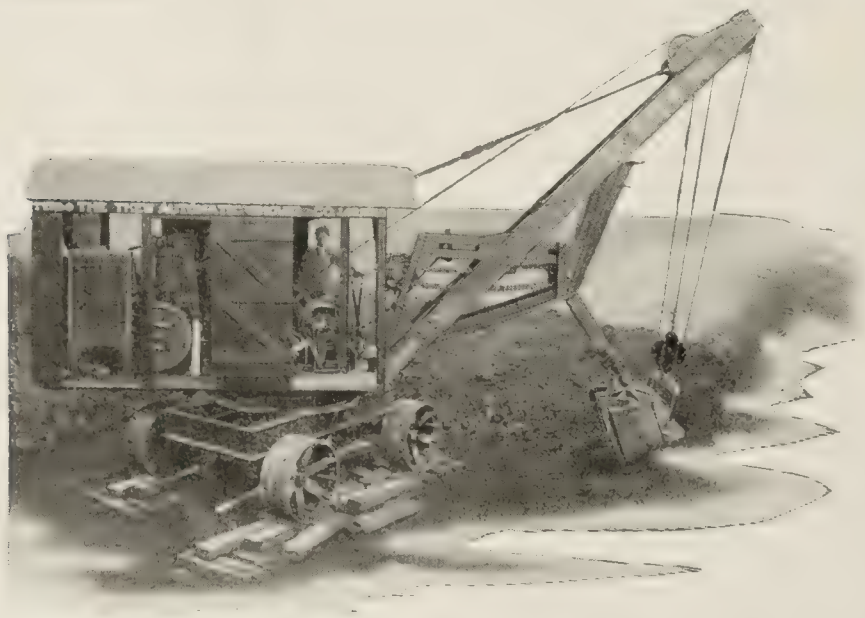
The Thew type 0 gasoline shovel is not a new design, not an experiment. It differs from the type 0 steam shovel, of which more than 800 are now in service, only in the power equipment. The type 0 Thew shovel, whether steam, electric or gasoline driven, has the same truck, the same boom and dipper, the same turntable and house, the same hoisting, swinging, crowding and travel mechanism. All these are the outcome of a continuous development during more than 15 years of service under varying conditions.

The swinging engine of the steam machine is replaced by a reversing planetary gear outside band friction which is controlled by a single lever from the operator's station.

The crowding engine on the boom of the steam shovel is replaced by a similar planetary gear friction mounted upon the turntable bed plate, controlled by a single lever and driving the crowding mechanism on the boom through a sprocket chain.

These planetary frictions have been in service with type 0 Thew electric shovels for years and are now operating on a large number of machines. The cost of maintenance has averaged even less than for the engines which have been replaced.

The main hoisting engine and boiler of the steam shovel, or the 20 h. p. motor of the electric shovel, are replaced by a 35 h. p. gasoline engine of approved design and established reputation.



It will be evident that there is no feature of the Thew gasoline shovel which has not proven its merit and entire reliability in extended service. The only uncertainty has been as to the size and power of the gasoline motor to be employed. This has been solved by adopting an engine that will positively furnish a surplus of power.

It is strictly a one man shovel, as no fireman is required and no licensed engineer. Another big advantage is the freedom from state or local "boiler laws."

Advantages stick out all over it. Although the power plant is contained wholly on the shovel, there is no difficulty about water supply and freezing, no troublesome furnaces or coal nuisance, scaly boilers, etc.

The gasoline shovel is splendidly equipped and adapted to clay pit work and its manufacturers claim that it possesses greater power for digging or for traveling than the corresponding steam or electric shovel.

Information in detailed form sent as requested.

Woodhouse Steam Shovel Chain

The Woodhouse Chain Works, Trenton, N. J., uses in the manufacture of its chains for shovels and dredges, a scientifically selected, pure pig iron, treble worked and re-rolled.

The care exercised in the selection of the materials, and the care used by the workmen in building this hand made chain enables it to wear at least 50 to 100 per cent longer than other chains under the same conditions. It is tough and strong.



Chain as Originally Furnished

The iron used in manufacturing the chain was tested in a physical laboratory. A series of round pieces of one-inch diam-



Chain as Worn and Stretched When Taken from the Machine After 16 Months' Continuous Work

eter and eight inches long, were tested and the results were as follows:

Per square inch—Tensile-Test—50,880 lbs. to 51,600; elastic limit, 34,710 lbs. to 35,640 lbs.; elongation, 33¼ per cent; reduction of area at fracture, 51 7/16 per cent.

In considering the above data, it is no wonder that the chain, under stress, assumes the form shown in the illustration.

Pamphlet of description and testimonials mailed on request.

Industrial Efficiency Service

The industrial field as a whole, has a very definite place for the business counselor.

You as clayworkers know that this is true, know that the steel, the cement, the textile workers, the packers—all—have recognized and have availed themselves of the trained services and advice of men competent to suggest and place in operation, methods of eliminating waste, and establish new standards of labor, material and expense.

You as clayworkers are undoubtedly desirous of securing the same competent service that has led to reduction in costs and the increase in efficiency that the other industrial units have adopted and found to be good.

L. V. Estes, Incorporated, Chicago, as industrial business engineers, have already applied these methods in terra cotta and in brick plants, and have been successful.

They will be successful on your plant, because they analyze and seek out the troubles. From wide experience and records of many clients they know what troubles are com-

mon to the industry—and how they are to be remedied. They bring together on the job the experience of having treated similar troubles in a variety of lines. They come into your plant with a fresh eye and with a different point of view from your own, yet with the same purpose in mind. They come as trained observers, with open and receptive minds, and approach your problem from a new angle free from the close focus and all personal equation.

The L. V. Estes organization is devoted to service. They know that only in so far as they perform admirably shall they achieve reputation, character and prosperity.

A Ticking Conscience

The device is illustrated, its use is generally known; but it's value can hardly be overestimated to the man or company owning and operating a clay plant.

The fire loss on these plants is enormous each year, and situated as they are on the outskirts of towns and settlements, a fire once given headway usually goes to completion, because adequate means of fighting it, in both men and apparatus, are lacking.

Fire may have its inception at three different places, all widely separated, and all potentially dangerous, viz., the boiler room, dry house and kilns; and it is absolutely necessary that all parts of the plant be under careful scrutiny between 6 p. m. and 6 a. m.

"In the long hours of the quiet night, things will happen;" the expression is apt, and applies not only to the risk of fire and vandalism, but also to the man who sleeps at the kiln, the burner in whose charge and care you have placed the *almost finished* ware to be brought to a climax—a hard burned product.

Stations or boxes are placed at intervals through the plant, the watchman on his rounds inserts each station key into the clock which he carries with him; and the number of that station is registered on the paper clock dial, and the exact time of the visit is shown.



It is a protection to both the plant and the night men in charge; it proves their honesty and loyalty, for the impressed record cannot be disputed.

The Hardinge Watchman's Clock is the watchman's "ticking conscience," it keeps him on his tip-toes, it keeps him awake and watchful, and he keeps the firemen awake, as a natural sequence.

W. H. Brecht of the Boone Brick, Tile and Paving Company, of Boone, Iowa, has the following to say regarding the value of the system:

May 4, 1915.

Hardinge Bros., Inc., Chicago, Ill.

Gentlemen:—In response to your letter of the 30th inst. wish to say that when we purchased your watchman's clock system we had in mind fire protection only, but it also serves another purpose of equal or greater importance, and that is giving us a check on our kiln burners at night. Both points are of paramount importance. Yours very truly,

Boone Brick, Tile and Paving Company,
By W. H. Brecht.

Hardinge Bros., Inc., 1760 Berteau Ave., Chicago, will send detailed information on request.

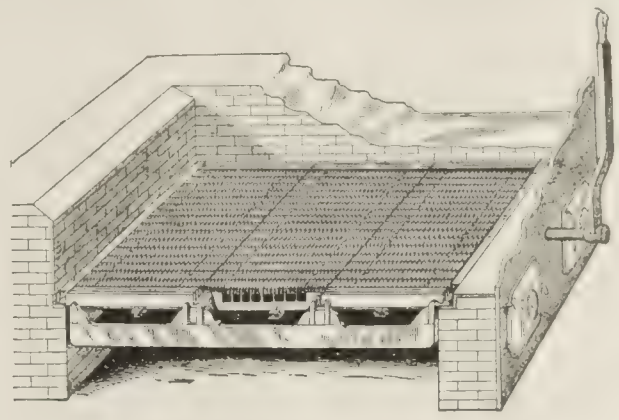
Martin Grates

Why do away with stationary horizontal grates; and why install shaking grates? is a double question of merit that has been answered by dozens of manufacturers by installing Martin grates.

It should be answered by dozens more this season, by those concerns especially who must have just a little more margin between cost and selling price, in order to fight through the business depression just ending.

Quoting from an article entitled "Boiler Room Economy" published in the Jan. 5, 1915, issue of "Brick and Clay Record," the writer says in part:

"Perhaps ninety per cent of our boilers are defective and do not begin to give their rated efficiency, because of a neglect to see that flues are clean, that scale formation is regularly removed, that holes through walls, breeching and stack are properly sealed. All of the above increase the amount of fuel used, and lower the efficiency of the steaming plant, yet



all together, they do not cause the loss that is occasioned by the selection and use of *improperly designed grates.*

"Coal cost is the most important item entering into manufacturing cost.

"In firing over a stationary horizontal grate, the fireman needs constantly to use a slash bar; to do so means that every ten or fifteen minutes the furnace doors are open, cold air rushes in and the heat is moderated in proportion to the amount of air admitted; the fuel bed is disturbed; it burns out quickly, and delivers a volume of volatile gas that is impossible to consume, this gas going out the stack as wasted units * * * * impossibility to thoroughly clean the grates of the accumulation of fine ash and clinker so that uniform combustion can take place over the entire grate surface. No better *expression of inefficiency* could be given.

"Substantially all the above waste can be eliminated by installing sets of shaking grates. * * *

"By so doing it is possible to operate a boiler or boilers, not only up to and above their normal rating, which is sure economy, but it is also possible to burn the cheapest grades of coal, such as slack and screenings.

"This in itself will make a handsome saving during the year."

Martin grates under boilers are doing all and more than the manufacturers claim for them, they will save money, and they will increase the horsepower of boilers at the same time. The Martin Grate Co. claims that clay product manufacturers can better afford to tear out their old grates and install Martin shaking grates as the saving thus effected will soon pay the original cost and then continue to pay dividends in cash and satisfaction throughout the year.

Change of Name

The Edgar Allen American Manganese Steel Co., is now known as the American Manganese Steel Co.

The new name, effective April 15, 1915, was due to a desire on the part of the company to get away from the former cumbersome and awkward title.

No change other than in name is involved.

The Cleveland Clutch Co. has been absorbed by The Reliance Gauge & Column Co., 5902-5912 Carnegie Ave., Cleveland, Ohio, who expect to be able very soon to take care of clutch and pulley business among the clayworkers.

H. M. DEAVITT, *Ceramic Chemist*
209 South LaSalle Street, Chicago
Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

The DEWEY 5-Ton Locomotive
It never balks on heavy loads or grades
Why not let the Dewey do *your* work?
DEWEY BROS., Inc., Goldsboro, N. C.

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.

DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.



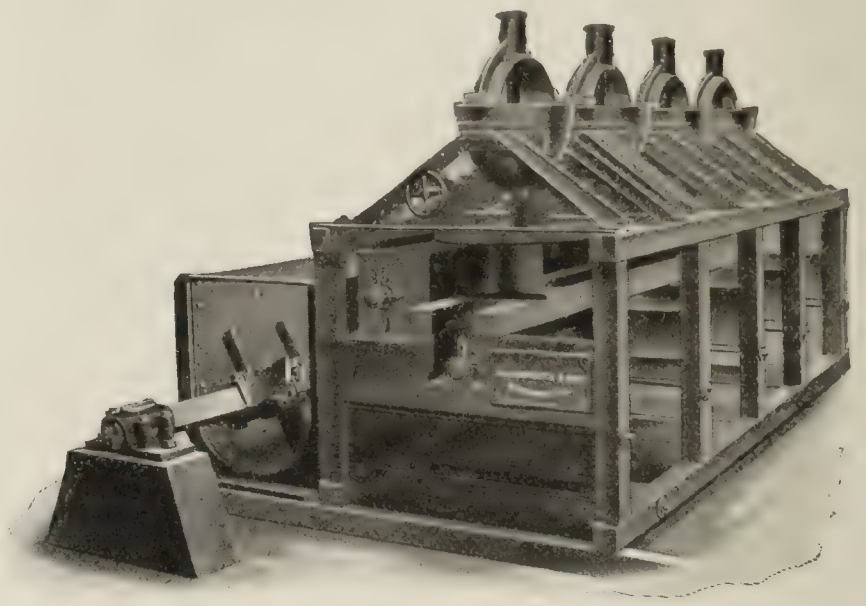
Brick Houses
And How to Build Them
A book containing 219 (8x11 inch) pages illustrated by over 300 designs and details of brick house construction, beside perspective views and floor plans of 82 brick houses with estimates of cost construction and miscellaneous data about the use of brick from its manufacture to its placing in the building, including ornamental brick and tile work, sewer construction, fireplaces, brick veneer construction, arches, cements and mortars, how to estimate the cost of brick construction, etc., etc.
The houses shown are all of artistic design drawn by leading architects and show what can be accomplished by the use of brick as a building material.
Price, Postpaid $1.00
Book Department *Brick and Clay Record* Chicago

New Machine for Clayworkers

A. L. Schultz & Son, 1675 Elston Ave., Chicago, are presenting a new machine to the clayworkers.

It is a proportioning device and is particularly adapted to those plants that mix two or more materials for the body.

The proportioner delivers to the conveyor exact percentages of each material, and the conveyor delivers the mixture to the pug mill. By this mechanical arrangement it requires absolutely no supervision and the batch is always correct in formulae.



Schultz Proportioning Device

It cuts the cost of manufacture and it assures a uniformity in the ware that is imperative if success is to be had.

It serves equally well on brick plants where shale and fire clay, fire clay and managanese (or iron oxide) is mixed and can be adjusted to suit any desired output.

Undoubtedly it is a winner for terra cotta works, for it has already been installed by several concerns that are mixing four or more materials for main batch all day long.

Full information on request.

Slipping Belts

What does it profit an engineer if he has the right kind of boiler, the right kind of grates, the right kind of stokers, the right kind of draft, the right kind of engine and the right kind of belting, only to lose approximately 30 per cent of his driving power by belts slipping? When something is wrong with the drive, why not fix the drive? The belt is all right, or at least it was all right before it was injured by improper treatment, caused by tight tension, and friction due to running on a smooth pulley face. The less the tension can be made within reasonable limits without causing slipping, the longer will be the working life of the belt. Belt manufacturers tell us the same thing and it is claimed by the best practice that neatsfoot and castor oil is the best and the only food or lubricant for leather belts. Its use means pliability which overcomes a part of this friction.

By the acknowledgement of belt manufacturers, it is an absolute fact that belt burning is caused by slipping which results in cracking, breaking, and loss of time and money. This trouble is prevalent particularly in plants where the drives are short and heavy.

The chief engineer of the Wright's Health Underwear Co., Troy, N. Y.. states in his report to the president of The "Gripwell" Pulley Covering Co. that he has eliminated this trouble by using "Gripwell" pulley covering. Their pulleys are located in very damp places, some of them being where there is a great deal of live steam.

"Gripwell" is an oil and cement compound applied, in con-

junction with a specially prepared canvas, to the pulley face. It acts as a lubricant to the belt and at the same time gives the pulley a leather like surface.

It is claimed for this pulley covering that it permanently stops all slipping, thereby increasing the life of the belts as well as of bearings and machinery and the efficiency of the power plant.

It works equally well with all kinds of belting whether made of canvas, leather, rubber, camels hair, or other materials. The "Gripwell" Pulley Covering Co., 601 Candler Bldg., New York City, will send more complete information regarding this pulley covering to all inquirers.

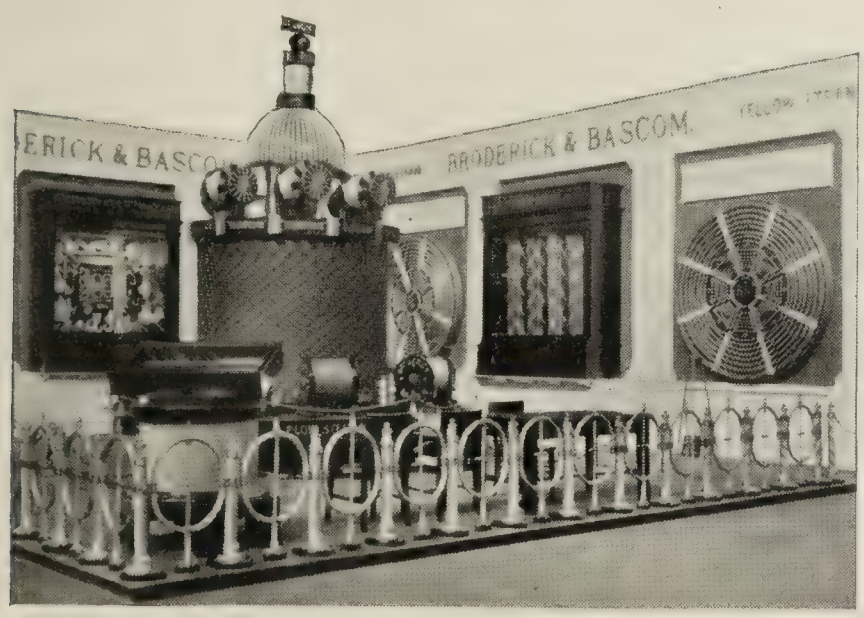
"Yellow Strand" at the Frisco Fair

The Broderick & Bascom Rope Co., St. Louis, Mo., have in their exhibit at the Panama-Pacific International Exposition, a most comprehensive showing of wire—and wire rope.

The exhibit occupies a space about 40 feet square, in the center of which is a very large reel of Yellow Strand Powersteel wire rope, 9 feet in diameter, which rests on a moving platform that constantly revolves. On top of the large reel are six smaller reels of wire rope representing the six strands of a rope which is about to be laid up in finished form. These reels revolve with the large reel and at the same time turn in an opposite direction by means of planitary motion. These smaller reels also revolve in the same direction as they would when being laid up into a finished rope in a wire rope machine.

At the bottom of the large reel is a revolving table, 15 feet in diameter, on which are placed reels and coils of wire and wire rope of the various types and quality that are made by the Broderick & Bascom Rope Co. The center piece is crowned with a beautiful polished dome covered with highly finished wire ropes that are set in radial form on the dome. On the top of the dome is a small reel of wire rope made in paper weight design, representing the company's wire rope paper weight trade mark.

This explains only in a small way the ingenuity and beauty of the exhibit.



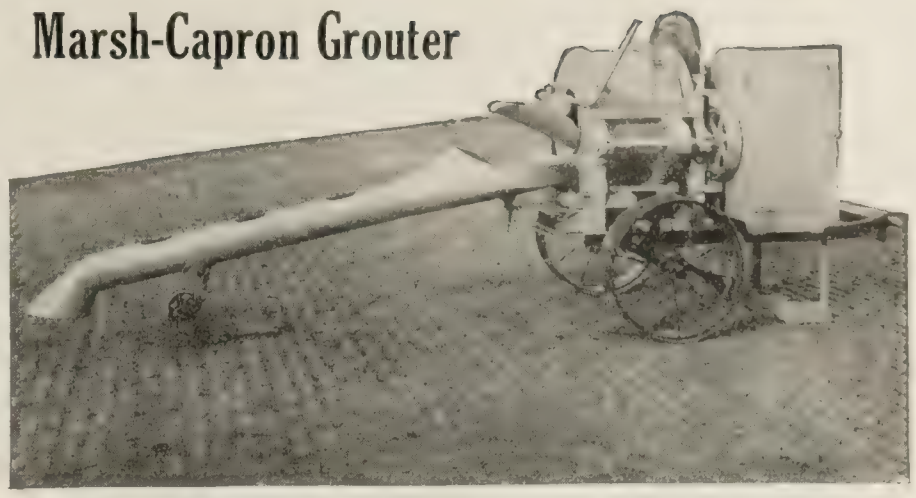
View of Broderick & Bascom Exhibit

Not only users of wire rope, but every one visiting the exposition should not fail to see this exhibit, as it indicates the special care that Broderick & Bascom exercise in the manufacture of their wire ropes of all descriptions as well as the high quality of material used in their construction.

A Bonnot Catalog-ette

It is enclosed in brown covers, inked in black and colors,

Marsh-Capron Grouter



Most economical, easiest and most satisfactory grouting is done with this machine. Write for price.
MARSH-CAPRON MFG. CO., 461 Old Colony Bldg., Chicago

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways
Yellow Strand Wire Rope
Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.



Pyrometers

We won't attempt to teach you your business. You have been at it too long. We can and will prove that we know ours and particularly that portion of ours which applies to yours. Let us send you a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa. 10

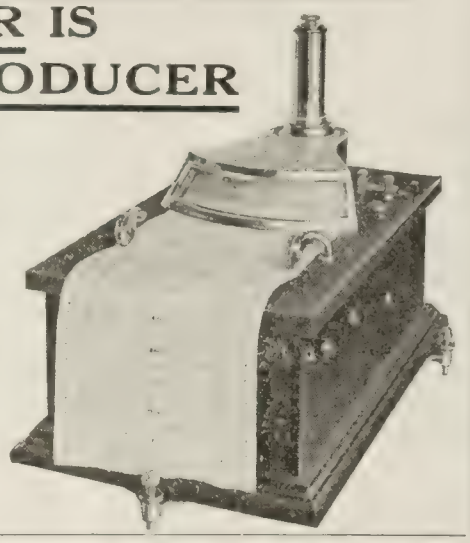
"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
Offices: Steubenville, Ohio
Mills: Newark, Ohio
BUCKEYE MEANS BEST
BEST MEANS BUCKEYE
All Sections from 12 lb. to 40 lb. per yard
Write or wire us, when in need.
No order too large to handle promptly or too small to secure immediate attention.

THE BURNER IS THE PRODUCER

Are you willing that he should produce by guesswork?

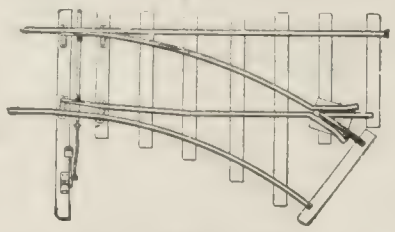
Combine forces with him. Give him a Price Pyrometer installation and note that his enthusiasm and his wisdom grows.

He takes on fresh courage for his work because he **knows** what he is doing.



The Price Electric Co.
12367 Euclid Avenue
Cleveland, Ohio

SWITCHES
CROSSINGS
FROGS
SWITCH STANDS
RAIL BRACES
TIE PLATES



Any kind of *TRACK EQUIPMENT*, standard or special, shipped the day you want it

The Cincinnati Frog & Switch Co.
Cincinnati, Ohio

CARS

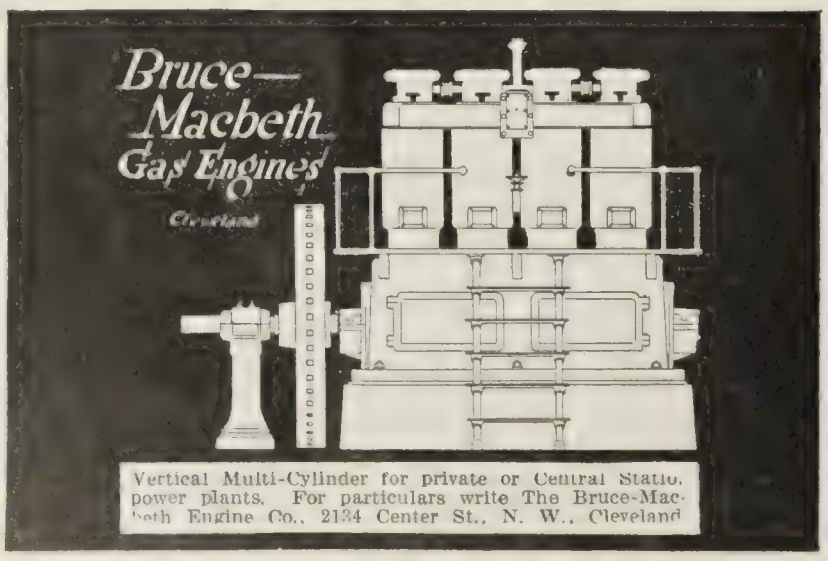
Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS CARS

CARS



twenty pages long, with "Bonnot Clay Machinery" across the front.

It appeals—because it is terse. It talks in pictures that are clear—clean—plain; in English that is short—brief—punchy.

It shows what is good—and best—in ideas and iron—for any man who works in clay.



"Canton Special" Brick Machine

It costs you a cent to find out what it is—a cent's worth of postal card—your name on this side—their name (The Bonnot Co., Canton, O.), on that side—a green iron letter box—a wait—and it's yours.

The Importance of Four-Color Printing

Color-work became a necessity in the advertising and selling of face-brick, the moment that the rough textured brick made its appearance and brought with it the demand for "mingled shades." Before that, it was only necessary to take a single sample of face-brick (weighing perhaps five-and-a-half to six pounds) and either sending it by express or carrying it by hand, present it to the architect or other prospective user and secure the order for a certain quantity, "same as sample."

The "life in brickwork" gospel extended to the use of as many as forty variants, blended with neutral mortar joints to make a harmonious wall. The panel which would contain all of these colors would weigh not less than two-hundred-and-fifty pounds and the impossibility of easily transporting a weight of this kind can be seen.

The makers of face-brick were dubious in the beginning, as to the possibilities of color-work and some of the first attempts to reproduce face-brick effects looked very much more like kitchen oil-cloth than anything which could carry the impression of soft, deep tones in combination with rugged outlines.

The Barnes-Crosby Company found a way and its work is notable among brick manufacturers. A recent example is shown in the advertising pages of this issue of "Brick and Clay Record."

The Diamond Brick Co., San Francisco, whose plant is located at Pittsburg, Contra Costa County, Cal., has recently completed the installation of a Brown electric indicating-recording pyrometer set, which will control all the kilns in which the company manufactures its stock face brick.

The Diamond Brick Co. manufactures a complete line of red, buff, gray and cream face-brick, by the stiff-mud, wire-cut process, and designates its products "stock face brick" to distinguish them from the common dry-pressed wares.

The company's plant has been in continuous operation during the winter season. Three shades of buff stock face brick are now being supplied for the new Clowson School Building, Oakland, Cal.

This same company also supplied the red brick used for terraces and walks about the Model Brick Residence erected at the Panama-Pacific International Exposition.



AS THIS IS WRITTEN the news is still coming in regarding the ramifications of the sinking of the Lusitania. But standing stalwart among the disquieting rumors is General Business, unperturbable and undisturbable. There comes the report from Bradstreet's that building projections throughout the country have overtaken all the 25 per cent decrease reported in January, with the exception of 6.3 per cent. Eighty cities are included in the report, which shows a total expenditure of $50,004,967 for April as against $53,366,635 for April a year ago, a decrease of 6.3 per cent.

It will be recalled that in February and March the decreases were in the neighborhood of 12 per cent and in January the loss from a year ago was 8.3 per cent. In the last quarter of last year, however, the decrease from the like period of 1913 ranged from 13 per cent in November to 39 per cent in December. In April this year, 29 out of the 84 cities reporting, or about one-third, showed gains.

As regards permits, it is to be noted that the total recorded in 84 cities this year, is 18,192—a decrease of 1.2 per cent from a year ago. Building expenditures for four months of the calendar year aggregate $216,789,605—a decrease of ten per cent from last year, which in turn lost 11 per cent from 1913.

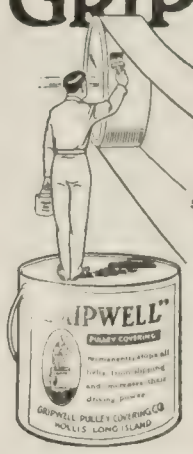
War orders now running in this country total more than One Billion Dollars. In this amount is included the estimated amount that is being expended or which will be expended immediately, for extensions to present buildings and equipment in the plants that are working day and night to fufill the promises of early and uninterrupted shipment, which were a part of the requirements of the foreign buyers.

Regardless of what happens, it should be borne in mind that these contracts—being largely with England and with the Allies—will have to be continued. They run three years ahead, and are not terminable, even though peace should come in the interim. Industries that are now being benefited by war orders will continue to reap the rewards that come from contracts placed under stress and at attractive prices, long after peace shall have been established in Europe. At the same time, the continuation of hostilities will simply add to the waiting list—the nations standing in line, as it were, waiting for their turn to place business with American manu-

At the close of the periods covered by present contracts, America will still be the granary of the world. What the labor conditions will be is a conjecture. There may be a rush to our shores, immediately upon the disbanding of the remnants of the armies of men who have been withdrawn from their natural pursuits. On the other hand, the mother countries may offer great inducements to able-bodied men of American citizenship, and foreign parentage.

Those who have made a study of the problem seem to be-

"GRIPWELL"
Pulley Covering
Does ONE Thing and Does it WELL
Stops Belt Slipping



Belt slipping gives your engineer his young gray hairs and works untold havoc with your fuel bills, sending them skyhooting high regardless of the work you get done. "Gripwell," as the picture shows, is applied to the pulley together with a specially prepared canvas. It gives the PULLEY a leather-like surface. It gives the BELT a greater driving power — 30% greater—or enables you to run the belt ⅓ slacker under a full load. "Gripwell" does not injure the belts; it is actually a belt preservative. Its use means a saving in money, time, labor, oil, power and fuel. Works equally well with all kinds of belting; canvas, leather or rubber. Doesn't your business judgment prompt you to take it up?

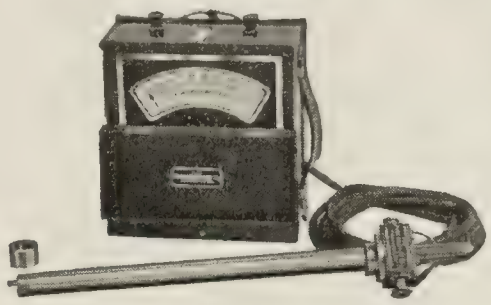
Write to-day for illustrated folder No. 14.

SOLD ON FIVE-YEAR GUARANTEE

"Gripwell" Pulley Covering is guaranteed for five years if applied according to directions. Not affected by acids, fumes, smoke, steam or climatic conditions. Price 75c per lb., f. o. b. New York.

"Gripwell" Pulley Covering Co.
601 Candler Bldg., New York City, N.Y.

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

Jackson & Church Company
Saginaw, Michigan

PERFORATED METAL SCREENS
As required for BRICK MAKERS USES.



Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.
New York Office
Room 1028 Cortlandt Building



Webb Wire Wears Well

Our
"Red Label" Piano Wire
is made especially for Brick and Tile Cutting

All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

Ask for Sample and Prices

THE WEBB WIRE WORKS
New Brunswick, N. J.



Davenport Locomotive Works,
Davenport, Iowa

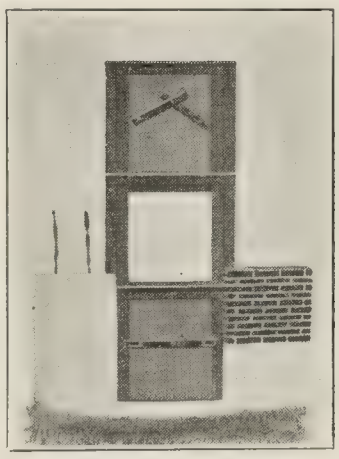
ZOOK
SILO FRONT

It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

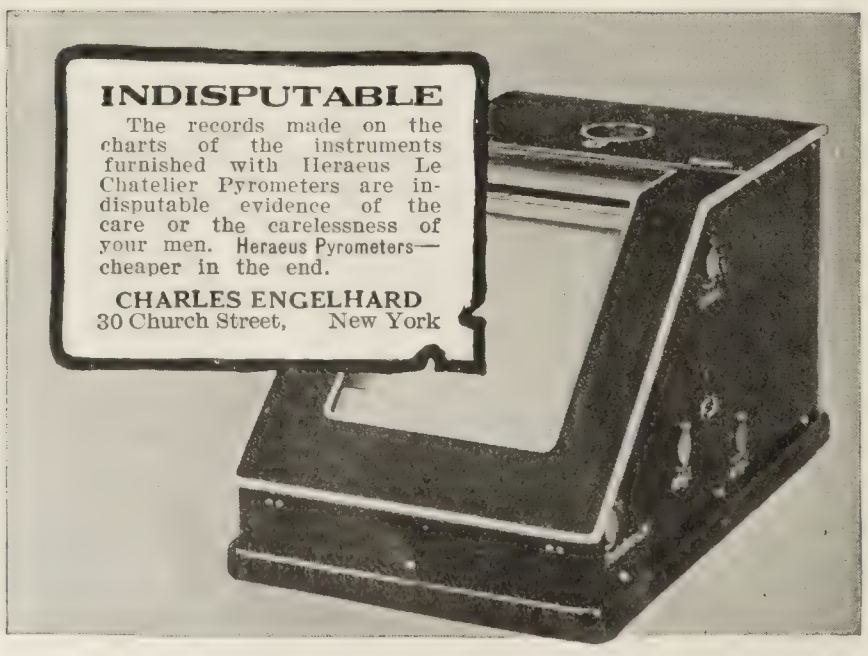
It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.



G. W. ZOOK
BUFFALO KANSAS



lieve that nothing which Europe can offer will induce any great amount of emigration from our shores, and it would seem that, since no man knows whether the coming peace will be a lasting peace, our supply of labor will be increased, rather than the reverse.

Some idea of the development of the building movement in the country may be gained from the condition of the Hudson river brick yards in New York state. In January there were 300,000,000 common-brick still available for New York city consumption. On May 8 there was not a single barge load of common-brick to be bought in the New York wholesale market and the supply of brick in sheds and awaiting shipment totalled 117,800,000. This, at a normal market of fifty bargeloads a week, would not be sufficient to supply the need for longer than June 12. In the week ending May 6, sales totalled 56 bargeloads. If this demand increases between now and June 12, the season for brickmaking will have to be advanced.

As a matter of fact, some of the manufacturers who had planned not to ship brick into this market from the 1915 vintage until along in July, started to get their yards in order on May 8 and promised to be prepared to take care of any unusual demand by the first of June. *Prices in a single fortnight advanced in the New York wholesale market from* $5.75 *to* $6.50 *a thousand. There is not a sizable stock of brick in any dealer's yard and the result is that it is rapidly getting to be a manufacturers' market for the first time in almost a decade.*

A prominent brick manufacturer, summarizing the situation in the burned clay industry made this statement:

"I believe that this is the best time in the history of our country for the manufacturers of clay products to keep tight rein upon their emotions. We are upon the verge of a great prosperity. The destruction going on in half of the countries of the world must have its reaction here in a creative sense. We will be called upon to supply all of our own needs for many years. We have seen what war prosperity means, in the sense that millions of dollars are being turned into this country for war munitions and breadstuffs. These are all long term contracts at big profits. What will that war prosperity be when reconstruction and peace begins? Can we not all see the tremendous prosperity that will come our way then?

"It does not seem possible that an expenditure of $55,000,000 a day for war expenses can endure for long, especially when the very fountain-head of supplies are with this country and their delivery largely depends upon whether this country remains at peace. If complications finally should involve this country, how long could the war endure with the only exchange mart in the world big enough to take up the world's paper, placed, so far as finance was concerned, upon a war footing?

"But this talk of war is not conservative. It echos the preachments of the jingos. This angle, however, may give some assurance to doubting minds, but war or no war, this country is on the brink of a tremendous prosperity because it is the only source of food and commodity supply the world has today,—that is, which is big enough to deliver the goods. I am going ahead, making plans as usual and am confident that the time and method of seeking reparations for wartime affronts is not by war, but by controlling our passions and awaiting satisfaction until the day of reckoning comes. This course may not sound like the jingo talk now heard, but it is plain common-sense and it conserves money, property and, above all, the lives and health of the flower of our young manhood. I believe this is what the average man wants."

Do you read the classified ad. pages regularly?
Do you use them when you want a man—or a job?

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

CALIFORNIA

The Godfrey-Fuller Company, Oakland, Cal., is about to open its new plant at that point for the manufacture of vitrified paving brick.

The Board of Trustees of Bakerfield, Cal., has passed a resolution of intention, preliminary to the laying of a number of eight, six and three-inch sewers in that city.

Frank J. Craycroft, a brick manufacturer of Fresno, Cal., spent a week recently in San Francisco visiting the Exposition.

The new branch manufacturing plant which the Shredded Wheat Biscuit Company is preparing to build at Oakland, Cal., will require 100,000 enameled brick.

The Stockton Fire and Enameled Brick Company of Stockton, Cal., supplied the fire-brick for the garbage disposal plant at the Panama-Pacific International Exposition.

Contracts will be let next week for the necessary sewer pipe, brick and other materials required for laying a trunk line sewer and its appurtenances in the city of Sacramento, Cal.

The California Pottery Company of San Francisco, the Steiger Terra Cotta and Pottery Works of San Francisco, and the Pacific Sewer Pipe Company of Los Angeles, were bidders for an order of sewer pipe for the city of San Luis Obispo, Cal.

Plans are now being drawn at Stockton, Cal., for the construction of a sanitary sewer system to cost $350,000 and for a storm sewer system to cost $200,000. This city is already spending a large amount of money in the laying of six-inch and four-inch sewers in many sections of the town.

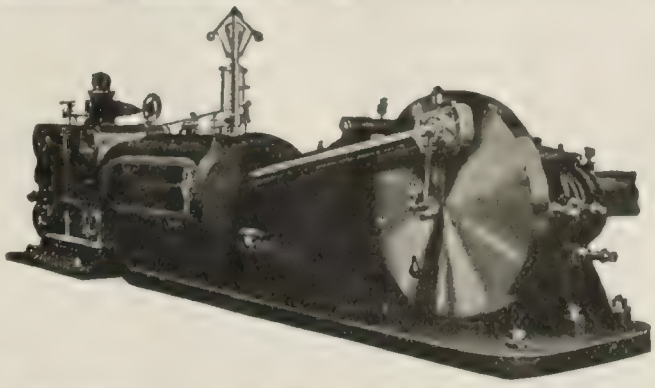
The Diamond Brick Company, Pittsburg, Cal., has secured an order for 120,000 face-brick to be used in the construction of the new Clausson school building in Oakland, Cal. This company has just completed an order for the fireproofing and face-brick on the Socalay building, San Francisco, which is said to be one of the handsomest and most imposing structures in that city.

Owing to the rapid construction of large numbers of frame apartment buildings and similar structures about the campus of the University of California at Berkeley, Cal., the city council has in preparation amendments to the building law which will require an enlarged use of brick or other fireproof material in the construction of such houses.

The California Paving Brick Company of San Francisco has made application for permission to issue 600,000 shares of its capital stock at the par value of one dollar per share in exchange for one hundred and sixty acres of clay land owned by the California Pressed Brick Company, San Francisco. The company has also applied for permission to sell 100,000 shares of its stock at fifty cents per share.

The Stockton (Cal.) Fire and Enamel Brick Company

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

Tycos PYROMETERS

Practical — Dependable — Guaranteed



Ask for these Books

Taylor-Cambridge Division
Taylor Instrument Companies
ROCHESTER, N. Y.

Let Us Show You —

The **correct** method of packing your samples for shipment.

Correct—because:

It is simple, convenient, economical and efficient.

It protects the brick.

The Hinde & Dauch Paper Co.
Sandusky, Ohio
Watch for our ad next issue

Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

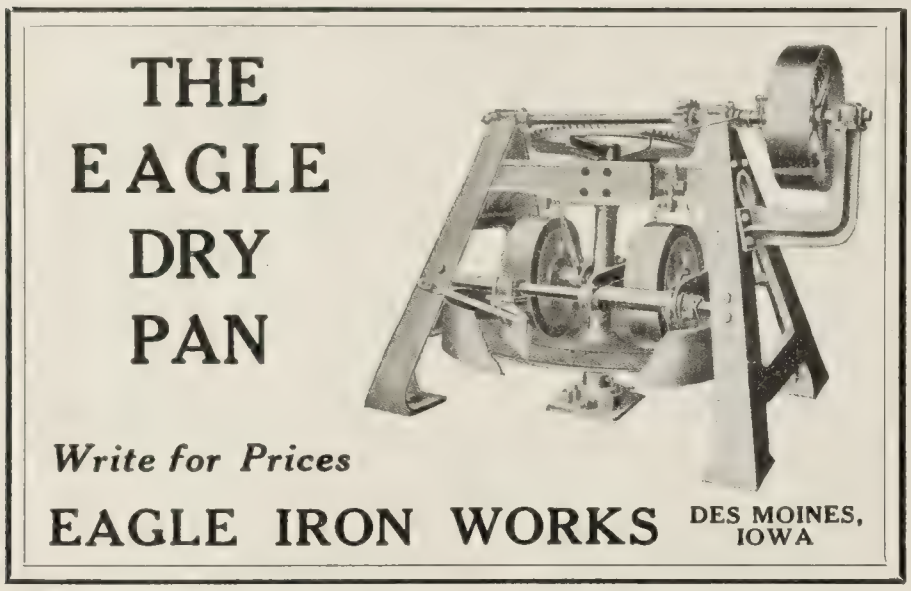
Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

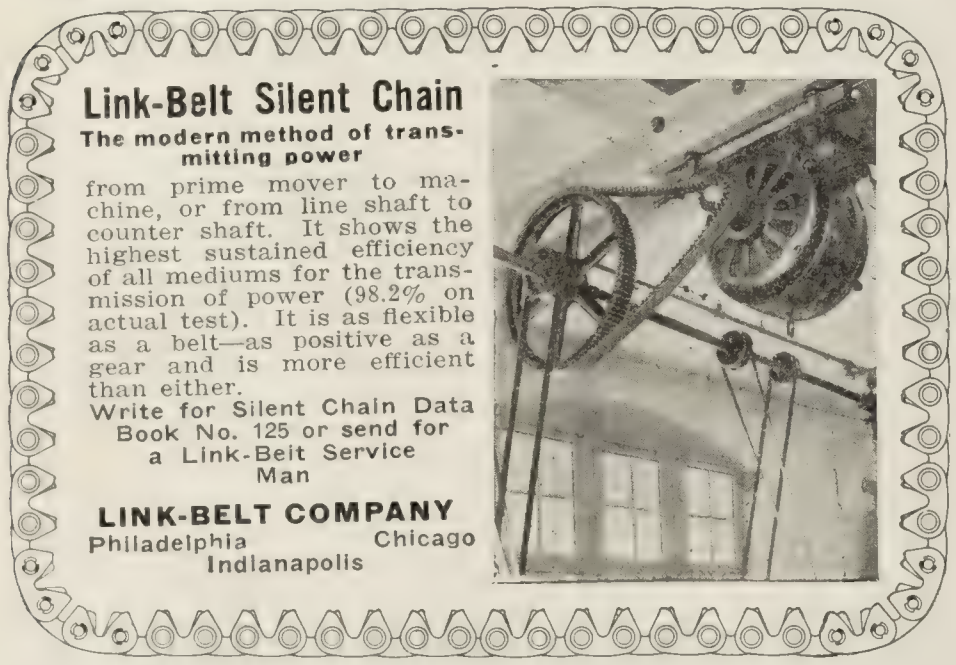
¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

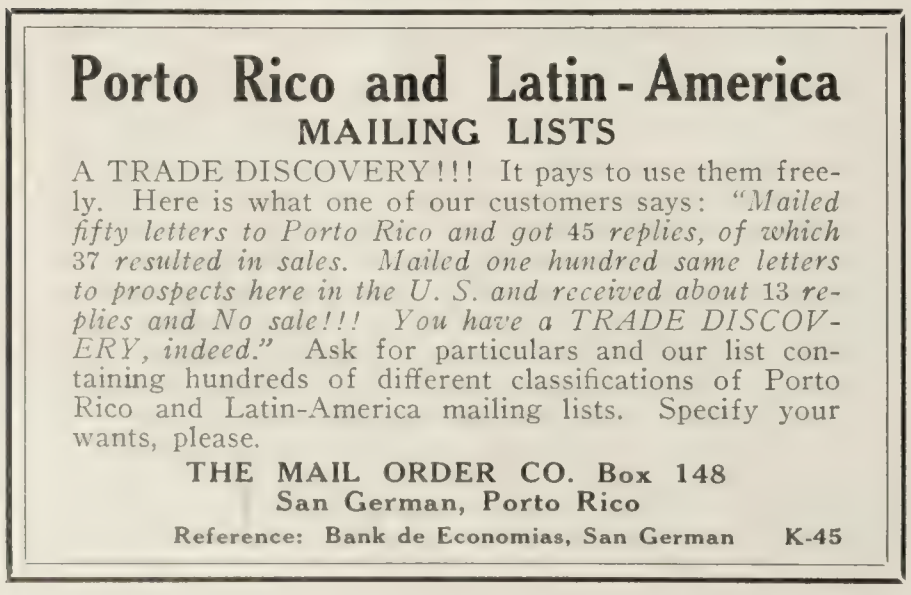
Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY
1229 Insurance Exchange Bldg., Chicago









is planning to install a modern drying system at its plant in the southern section of the city, the work to cost about one thousand dollars and to be done this summer. Owing to an increase in business this improvement has become necessary as the old dryer could not dry the brick fast enough for the kilns. At present the plant is working to capacity, employing thirty men, and turning out 300,000 brick every month.

The Los Angeles Pressed Brick Company, Los Angeles, Cal., has just closed a contract with the Winget Construction Company for approximately one hundred carloads of vitrified building brick, besides a large quantity of pressed brick, fire-brick, fireproofing and quarry tile. The material covered by the contract is to be used in the construction of a normal school at Fresno, Cal., and is said to be one of the largest orders for clay products ever placed in that state.

Notwithstanding some adverse influences, the building records for the larger California cities for the month of April made a good showing. In San Francisco the total valuation of permits for the month was $1,646,374. with one exception, the greatest amount for a single month since the reaction following the outbreak of the European war; in Los Angeles, the April total was $1,591,399, the greatest monthly total since the start of the war; and in Oakland, the total for April was $530,000, the largest monthly total for more than a year. With a few exceptions, the showings for April in building operations for the smaller cities throughout the state are very good as compared with preceding months.

COLORADO

The Standard Brick Company, Pueblo, Col., is enjoying a business revival, according to its president, F. L. Capers. Business increased with this company during the last two weeks in April to such an extent that it is now normal and is at the same high-water mark which it reached a year ago. The company's plant is working its entire force on full time.

A petition calling for a brick paving laid on a five-inch concrete base and with a sand cushion of one and one-half inches, has been presented to the city commissioners of Pueblo, Col. The new district, for which paving is requested, takes in all of the territory extending from Grand and Victoria Avenues in that city to the north side of Fifth Street, thence to the Main Street paving; and from Court Street at the Santa Fe tracks north to Fifth Street. The petition was signed by about ten per cent of the front footage involved, and was referred to the city engineer for checking and plans and specifications for the work. The maximum cost according to the petition is $2.50 per square yard plus the cost of excavating and curbing, the curb not to exceed 40 cents. The district includes some of the streets carrying the heaviest traffic in the city. It takes in what is known as the wholesale district and haymarket territories, the streets of which for years have been in a serious condition.

CONNECTICUT

Practically all of the brickyards in New Britain, Conn., and vicinity are now in full operation. A canvass of the manufacturers has shown stocks to be low, so low, in fact, that it is believed a building boom would soon exhaust them. Under prevailing conditions, which are considered about normal, a sufficient supply at good prices is looked for throughout the season.

DISTRICT OF COLUMBIA

The Washington, D. C., office of the Hydraulic-Press

Brick Company reports that business is improving and that the prospects are bright for a busy summer and fall.

Several brick companies of Washington, D. C., are bidding on the contract for 125,000 brick to be used in erecting the new Parkview School. The specifications call for rough-texture gray brick.

H. Stewart, of the Harbison-Walker Refractories Company, Pittsburgh, Pa., was in Washington, D. C., recently on a business trip.

West Brothers Brick Company, Washington, reports that business with them is particularly good, and that they are now handling all the orders that they can possibly take care of at this time.

According to the Virginia Brick Company, whose plant is just a few miles out of Washington, D. C., business is good. The past month's business was better than that for April, 1914. The company is now digging clay with a steam shovel in its pit.

Local brick men are much encouraged over the building outlook in Washington, D. C. The building permits for April totalled more than $1,000,000, which is a vast improvement over March figures. The companies furnishing common-brick report business as being very good.

According to information secured by government officials at Washington, D. C., recently, a large quantity of fire-brick will soon be needed because of the fact that a a great many new coke ovens are being built, and old ones rebuilt, on account of the dyestuff situation.

The annual meeting of the Builders and Manufacturers' Exchange of Washington, D. C., is to be held on June 7, when officers and a board of directors for the ensuing year will be elected. L. Perry West, of the West Brothers Brick Company, has been a member of the board for a number of years.

GEORGIA

The R. B. Small Company, manufacturers of sewer pipe at Columbus, Ga., has sold its plant and property to W. L. Dickey of Kansas City, Mo. After several visits to Columbus, Mr. Dickey finally purchased the property at the end of a week's conference with R. B. Small, its former owner. J. E. Minter, the present manager of the plant, will be retained in that capacity.

ILLINOIS

The Pacific Company, Chicago, Ill., capital $2,500, has been incorporated among other things to deal in brick and building materials; incorporators: M. H. Liston, Thomas H. Nolen and F. C. Harris.

INDIANA

The Brooklyn Brick Company of Brooklyn, Ind., has increased its capital stock by $50,000.

The Sheldon Tile Company, Sheldon, Ind., has been organized by Fred W. Freese, Andrew J. Neireiter and Frank E. Stouder with a capital of $20,000 to manufacture drain tile.

The Martinsville Brick Company's plant at Martinsville, Ind., is now electrically driven, and the company figures that a saving of about $200 a month will result. A one hundred horsepower motor drives the dry pan, a twenty horsepower motor is used to drive a fan that draws the heat out of the finished kilns, and a fifteen horsepower motor forces the draft for the burning kilns.

IOWA

Brick will be used in the paving of Delhi street and Julien

"The Woodhouse" Special Chain for Steam Shovels

LOOK AT THESE ILLUSTRATIONS and you'll instantly see why you will forget your chain troubles when you adopt the "WOODHOUSE."

Here is the chain as originally bought—



And here's the exact same links after 16 months of continuous service in heavy dredging.



Isn't this good evidence of the strength and durability of "Woodhouse" Chains, and why you should adopt our chains?

For these hand-made chains we use a special iron that must conform to a severe test—selected pure pig-iron, treble-worked and re-rolled.

Get our catalog and prices—also let us send you a book of testimonials that will convince you.

WOODHOUSE CHAIN WORKS
Trenton, New Jersey

IN THE HEART OF THINGS



$2.50 Per Day
A pleasant room with private bath, facing large open court. (Not one room, but one hundred of them.)

$3.00 Per Day
An excellent room, with private bath, facing Street. Southern exposure. (Not one room, but eighty-seven of them.)

Also attractive Room without Bath for $1.50 per day. The Restaurant prices are most moderate.

Make Your Dollar Produce More in a New York City Hotel

Location

One minute from 5 of the largest department stores. Five minutes' walk from 19 principal theatres. Within a block of the Fifth Avenue shopping district. Every line of transportation passes the door. Fifth Avenue Bus lines and principal surface lines. The Hudson Tubes across the street. Elevated Railroad Station across the street. Subway Station three minutes away. Grand Central Station within seven minutes. Pennsylvania Railroad Station just one block away. **For convenience one could ask no more.**

The Hotel—600 Rooms, 400 Baths

EVERYTHING NEW AND MODERN. A FIVE MILLION DOLLAR HOTEL EQUIPPED TO SATISFY THE MOST EXACTING TASTE.

All Baggage Transferred Free to and from Pennsylvania Station.

THE HOTEL MARTINIQUE
On Broadway, 32nd to 33rd Streets, NEW YORK
Charles Leigh Taylor, President Walter Chandler, Jr., Manager
Walter S. Gilson, Vice-President

"NUGGET"

Bearing Metal

FITS YOUR LADLES

Guaranteed

MOST *Economical and Efficient*

For

Brick and Clay Working Machinery

Because

Exhaustive research and practical tests have proven that its hardness assures great wear resistance—its high compressive strength enables it to withstand heavy duty. Why don't you let us prove it?

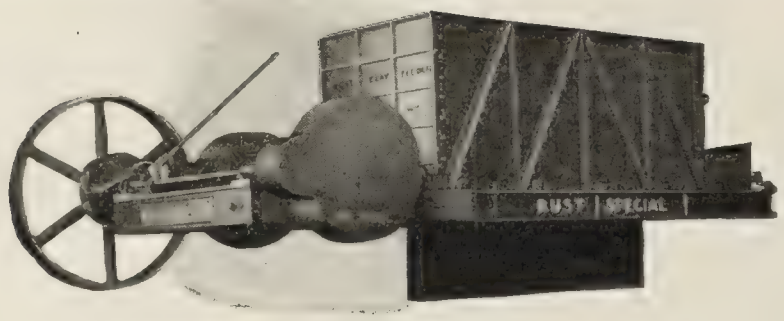
Price, 15 cents per pound, delivered.

Manufactured Solely by

The Cleveland Alloys Co.

Bearing Metal Experts

CLEVELAND OHIO



The Rust Clay Feeder

Is a machine with a purpose. It is used not only for **efficiency** but for decided **economy**—saving you upwards of $500.00 a year in your clay plant. While it saves you real money it also permits a more uniform mixture of your material and therefore improves your product. You may dispense with "something else" but not with The Rust Clay Feeder—it's **indispensable.** Shall we send you more evidence?

Write for Catalog describing our full line of clay-working equipment.

Marion Machine, Foundry & Supply Company

Box 395 MARION, IND.

avenue from Alta Vista street to Asbury street, Dubuque, Ia., a distance of more than a mile, according to a decision of the city council in a special session recently to settle the question. After a lengthy discussion, this material was approved and the contract for laying the pavement awarded to the Western Improvement Company, of Racine, Wis.

KANSAS

James Stanton of Holton, Kan., has received the contract for paving 30,000 square yards with three-inch vertical fiber brick.

A. R. Young and Company of Dodge City, Kan., recently was awarded the contract for laying 16,000 square yards of paving with three-inch vertical fiber brick.

Independence, Kan., let contracts on May 12, for the first brick country road in the state. It will be a half-mile in length, and will have a cement curb, the brick being laid with asphalt filler.

KENTUCKY

The Hall Brick Company, Maysville, Ky., is overhauling its kilns and installing a large blower fan at its plant.

A recent visitor to Louisville was W. C. Hughes, representing S. A. Weller, potter, of Zanesville, Ohio. Mr. Hughes called on the florists of the city and other retailers who handle jardinieres, fern dishes and similar articles.

Several of the brick dealers of Louisville, Ky., are represented in the architects' offices by small panels of the brick they handle. A typical instance is in the office of Hugh L. Nevin, a prominent architect. The principal displays there are two panels, two and one-half by four feet, supplied by the R. B. Tyler Company.

Lexington, Ky., is doing a large amount of new sewer construction and there are a number of other Kentucky towns which are prospective purchasers of sewer pipe on a large scale, though none of these projects have developed as yet. Considerable demand for better grades of brick is being received from builders of high class residences.

The city of Louisville, Ky., is proceeding with its street paving program, giving considerable attention to brick as a paving material. Two projects are under consideration, one providing for the pavement of a section of Dupuy Street and the other of a section of Howard Street. The estimated cost of these improvements is $15,000. The contracts will be let shortly.

The P. Bannon Pipe Company, Louisville, Ky., finds business active. The drain tile season is over for the spring, but the sewer-pipe demand is good and brick are in demand. Mr. McDonald states that the call for the company's new line of salt-glazed brick is steadily improving, and that there was no complaint as to the way it is being received.

The East End Brick Company, according to its secretary, P. M. Crane, is making rapid deliveries to the Bernheim building on Fourth street. The plant is running on full time with deliveries going, for the most part, to small residence jobs. Mr. Crane states that there is an increasing demand for face-brick, and said that the company was getting out a larger proportion of that product by a more careful sorting of the brick as it comes from the kiln.

The plant of the Coral Ridge Clay Products Company, Louisville, Ky., is being operated to capacity, having recently turned out an order for 150,000 specially made, smooth-faced, hollow brick which have been delivered to

the new plant which the Ford Motor Company is building in Louisville. In addition the company has a contract for a half million common-brick for the same building, which is a $500,000 structure. Besides this one order the company has others ahead which will insure steady operation for some weeks to come.

The first half of May found the brickmakers of Louisville, Ky., in the midst of what promises to be a fairly satisfactory year, though not up to the standard of some previous years. Operations are now under way at the plants, some of them running to full capacity and others not so busy, but all of them doing a good business, everything considered. On all sides it is stated that conditions are promising and that business is "picking up." One thing that facilitates this is the fact that money is easy and there is plenty of it.

There is continued tendency this year in Louisville, Ky., to cut up building operations into smaller jobs, with a few exceptions. The records of the building inspector's office show that the estimated cost of building for which permits have been taken out, has fallen off in value, although the number of permits has greatly increased. This will result in orders being received by the brickmakers for small quantities, though the orders will be more frequent. A number of large operations are in prospect, however, and there is a good deal of assurance that the brick men will get their share of the resultant business.

One of the large buildings this season in Louisville will be that to be erected by the J. B. Speed estate on Fourth Street between Walnut and Chestnut Streets, the estate having announced its plan to give the city a certain amount of property, sufficient to run a new street through to Third. This will give a second frontage and greatly increase the value of the property, which is so centrally located and so valuable that a large building will be required to insure profit to the owners. Loomis and Hartman, architects, have the plans for the improvements, which will take the place of a number of old buildings already on the site, and, it is announced that they will receive bids on June 1. The estimated cost is not given, though the entire improvement will be for retail stores and there is nearly 60,000 square feet of ground to be covered.

All the brick and tile manufacturers of Louisville are taking a great interest in the permanent exhibition of manufactured goods which is to be established in the city during the next few weeks. The Commercial Club committee which has the project in charge has completed its work and has taken a lease on the second floor of a building at Fourth street and Broadway. This will provide above 20,000 square feet of floor space, the floor having been designed to bear a weight of one hundred and fifty pounds to the square foot, and can be further strengthened. The lease is for a term of years, options providing for renewals. Practically all of the space on the floor has been contrated for even at this date. The principal purpose of the exhibition is to show the people of Louisville what is being manufactured in their own city. Also visitors will be taken to the display and may leave their orders for material there, instead of going out to the plants of the manufacturers, as is often the case at present. The display is now being installed and will be opened shortly.

LOUISIANA

The contract for the building of the Colonial Sugar Company's new warehouse at Gramercy, La., has been let

The "Invincible" Brick Barrow

Made with babbitted cast iron bearings, seasoned white oak, bent wood runners, cast iron shoes and wrought iron braces throughout.



It's a Marvel

Write for Price

¶ This barrow has become so popular among brick makers that we have hardly been able to supply the demand—but we have made up a good stock for quick shipment.

¶ We also make several other styles—get our catalog and prices before you buy any others.

The Toronto Foundry & Machine Co.
Toronto, Ohio

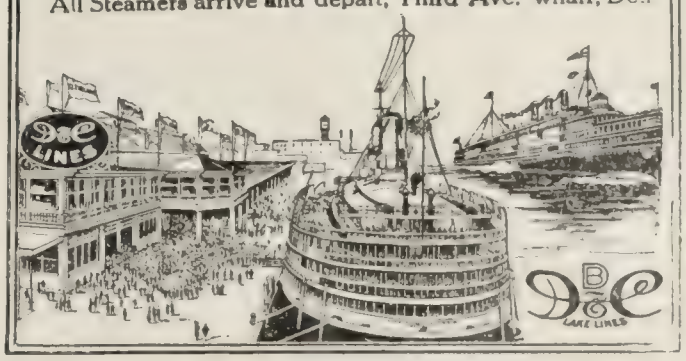
We make the "MEANS" Pans, Presses and Pugmills and a complete line of supplies for every make of brick machine.

THE COAST LINE TO
MACKINAC
DETROIT, CLEVELAND, BUFFALO, NIAGARA FALLS.
TOLEDO, PT. HURON, ALPENA, ST. IGNACE.

A LAKE TRIP FOR REST AND RECREATION

Have a real vacation on the Great Lakes, the most enjovable and economical outing in America. The cool lake breezes, the ever-changing scenes along the shore, and the luxurious steamers of the D. & C. Line are positive guarantees that you will enjoy every minute of your trip, and return home refreshed and glad you went.
Daily service between Detroit and Cleveland and Detroit and Buffalo. Four trips weekly from Toledo and Detroit to Mackinac Island and way ports. Two trips weekly, special steamer, Cleveland to Mackinac Island, no stops enroute except Detroit and Alpena. Special day trips between Detroit and Cleveland during July and August. Daily service between Toledo and Put-in-Bay.
RAILROAD TICKETS AVAILABLE FOR TRANSPORTATION on D. & C. Steamers between Detroit and Buffalo or Detroit and Cleveland either direction.
Send two-cent stamp for illustrated pamphlet and Great Lakes map. Address L. G. Lewis, G.P.A., Detroit, Mich.

Detroit & Cleveland Navigation Company
Philip H. McMillan, Pres., A. A. Schantz, V. P. & G. M.
All Steamers arrive and depart, Third Ave. wharf, De..





Pots and Pans in Burned Clay

A Florist's Need—Your Opportunity

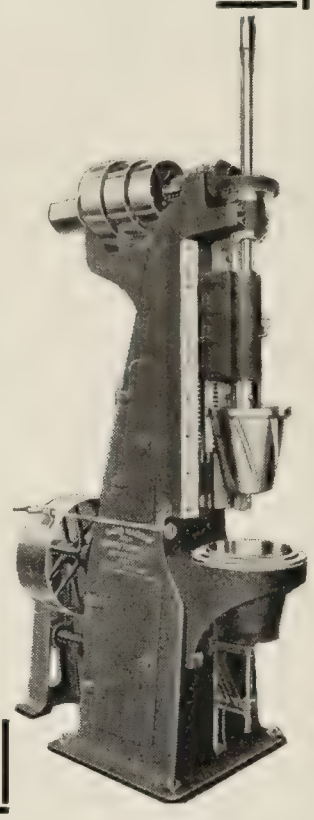
The green house men in your community use thousands of pots—thousands of pans—they import from adjoining states—they must have them—they are sold and broken—the demand is continuous—the price is good—why don't you supply their needs? You have the clay, the power, the dryer, and the kilns. Install a

Baird

Flower Pot Machine

in one corner of your factory, and win this cash trade.

Send us a sample of your clay and we will let you know if your material will make pots.



Baird Machine & Mfg. Co.

54-56 Jefferson Ave.

Detroit, Mich.

POSTERETTES



160,000 of these stamps have been used by brickmakers throughout the country. As many pieces of mail, and express matter, have carried the "Build with Brick" slogan. It is printed in bright colors and "catches the eye."

How about your using some of them? It is an inexpensive way of advertising your material.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD

445 PLYMOUTH COURT CHICAGO

to George J. Glover, a New Orleans contractor, the price being $65,000. The material selected is brick. Corrugated iron had been urged as a substitute for brick material, but was not used. The action of the Colonial company in specifying brick is thought to be important, as it will serve as a guide to other builders of sugar warehouses.

A defective oil pipe feeding the large continuous kiln at the Salmen Brick and Lumber Company's brick plant, Slidell, La., was the cause of a fire which resulted in damage amounting to about $10,000. The fire took place on the morning of May 1, being started by the bursting of the oil pipe at the furnace of one of the kiln compartments. A large amount of oil immediately flowed into the furnace and very shortly the entire top of the kiln was on fire. An explosion followed, but no one was injured. The fire was finally extinguished by the night force at the plant with the aid of a new water system which had its first tryout in fire fighting, although it was installed six years ago.

MARYLAND

The Jackson Vitrified Brick and Stone Company, Jackson, Mich., has been incorporated with a capital stock of $10,000.

Fire in the factory buildings and kiln house at the M. B. Paige Company's pottery plant, Peabody, Mass., May 3, did damage estimated at $2,500. The fire evidently started from the kiln, where about 10,000 flower pots were being burned.

The sale of the plant of the Westfield Brick Company of Westfield, Mass., is being considered by Receiver H. C. Lane, who recently received an offer from local parties, and has submitted it to the court. Mr. Lane believes the sale would result in the re-establishment of the bankrupt company's business on a profitable basis and result in giving employment to a number of persons.

William H. Woods, a member of the Boston (Mass.) City Council, and for many years selling agent and local superintendent of the Eastern Clay Goods Company, died very suddenly of heart disease at his home in the Brighton district of Boston, on May 3. Mr. Woods had just returned from a meeting of the city council when stricken. He was in his fifty-fifth year. Mr. Woods was considered an expert on building construction.

MICHIGAN

John A. Mercier, of the firm of Mercier, Bryan and Larkin, Detroit, was the recipient of many congratulations on May 2, the occasion of his fifty-third birthday.

J. Morley Zander of Saginaw, Mich., one of the "live wires" of the Michigan brick industry, states that a general "Build with Brick" movement is on throughout the state.

Will P. Thomas of the Thomas Brothers Company, Detroit, reports that the business for his firm has been excellent, considering the conditions of the present market.

The Michigan Face Brick Company is moving its offices from the Association of Commerce Building, Grand Rapids, Mich., to the Michigan Trust Building in that same city.

George H. Clippert, of the George H. Clippert and Brother Brick Company, Detroit, has about recovered from his operation and is now able to be about. Complete recovery is expected within two weeks.

The Croswell Brick Company, Limited, of Croswell, Mich., incorporated with a capital stock of $10,000, has

changed its name to the Croswell Brick and Tile Company, Limited.

W. A. Howell of the Collingwood Brick Company of Toledo, Ohio, was a recent visitor in Detroit and stated that it is the intention of the brick interests of Toledo to unite on a common basis and do something in the association line similar to the Detroit organization which already exists.

Considerable interest is being manifested in connection with Detroit's newest brick plant at Springwells, to be operated by Mercier, Bryan and Larkins. Practically all of the buildings, kilns and sheds are completed. The finishing touches are now being added, and the plant will be in actual operation about June 1st.

The Fairview Brick Company, foot of St. Jean road, Fairview, Mich., is now in its second year of existence, and reports a very satisfactory business. During the past few months extensive alterations have been made at the plant, one of the important improvements being an addition to the dryer. The company makes a white building brick.

A matter that is attracting the attention of Detroit contractors and builders is the amount of building construction now going on in that city. While the winter season was unusually dull, the weather of the last few weeks has started activities anew. Detroit now stands sixth in the country in the amount of construction work contemplated and bids fair to be very near the top of the list when the annual figures are presented for the various cities in the country. Today there is a valuation of $2,839,490 in building operations under way in Detroit. This is a gain of twenty-three per cent over the same period of 1914. The months of January, February, March and April last year showed two hundred and twenty-three buildings to be of brick. In the same period this year, three hundred and eighty-six brick structures are in the course of construction with an increase in value of ninety-seven per cent.

MISSOURI

Robert Nesch, Sr., president of the Pittsburgh Paving Brick Company, has been ill at his home in Kansas City, Mo., for the past three weeks.

The terra cotta trimmings on the fifteenth story of the Commerce Building, Kansas City, Mo., are being torn down and new trimmings put in their place. The reason for the change is due to the fact that the United States government has rented the entire top floor which is lighted only by skylights and the windows on the court opening. The design of the terra cotta will remain the same, but windows will be put in. Madoria and Birdall are the architects and the cost of the change will be about $20,000. Several terra cotta companies have bid on the work.

NEBRASKA

The Hibberd Brick Company, Kearney, Neb., has set a kiln of 6,000,000 brick, which it has begun burning. The greater part of this production has already been contracted for to be used in local buildings already under construction.

NEW JERSEY

At a recent meeting of the Trenton (N. J.) Pottery Packer's Local No. 49, it was stated that the packers were never so busy as at the present time and that the manner in which orders were coming into the Trenton potteries insured the continuance of this condition for some time to come.

Reports of a very encouraging nature regarding the con-



The Improved Hook Patent Up and Down Draft Kiln, Sullivan, Ind.

Be Sure You Get the Improved Hook Patent Up and Down Draft Kiln

Sold Only by **The Ohio Kiln Co., Vigo, Ohio**

THE CLIMAX OF KILN CONSTRUCTION

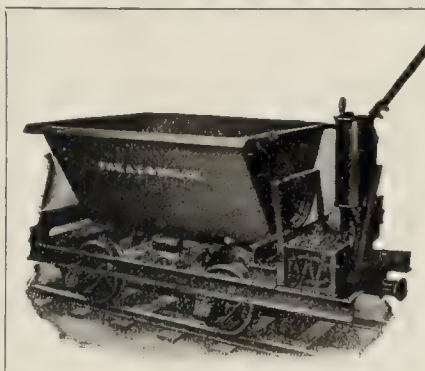
30 ft. kilns of brick were burned in 82 hours, including water-smoking period, and no under-burned or over-burned ware.
30 ft. kilns of drain tile were burned in 55 hours from start to finish and all courses burned uniformly; smaller kilns in proportionately less time.

Direct heat applied at bottom and top of ware gives uniform temperature in all parts of the kiln. It reduces the fuel consumption to the minimum, lessens the time required to turn a kiln, and increases the output of first grade ware.

Can be installed in any kiln; round, rectangular; old or new, at moderate cost.

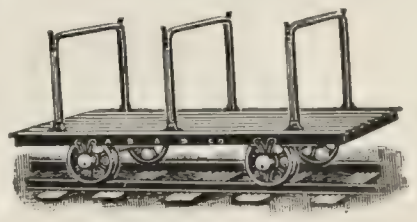
We Do What We Advertise. Write for Information.

Samples of your clay will be tested in our kilns free of charge under Mr. Hook's supervision.



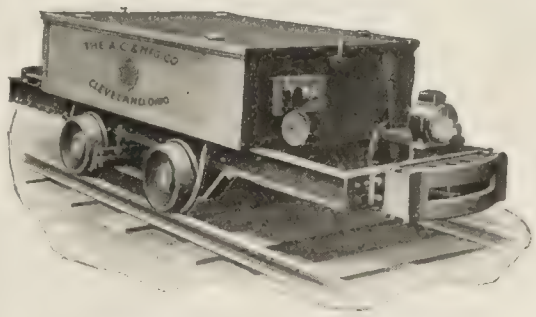
REDUCE YOUR HANDLING COSTS
By the Purchase of Efficient Equipment

No. 217-E. Side Dump Car Equipped with Motor



No. 126 Double Deck Dryer Car

ATLAS
High Efficiency
Cars and
Electric Locomotives

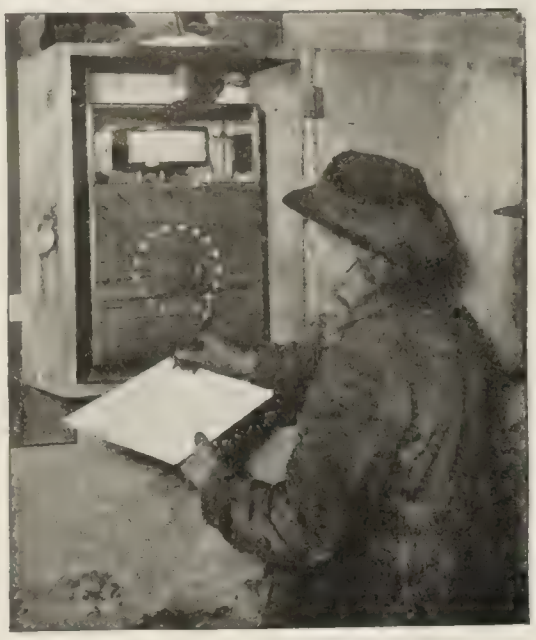


Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.
Dept. I
1287 Marquette Road, Cleveland, Ohio

Let The Burner Have A Thwing



Indicating Pyrometer in his shed connected by a dial switch to one or more Thermo-couples in each kiln.

Then he will not need to be making excuses for poor firing and poorer product. With a knowledge of the temperature before him, he can control his firing and produce better ware with less fuel.

Write for Bulletin No. 7

Thwing Instrument Company

437 N. Fifth Street, Philadelphia, Pa.

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA. – CHICAGO, ILL.

The Cement for Paving Brick Grout

Lehigh is High in Strength, Uniform in Color and Fineness. You Don't Have to Guess with Lehigh.

Specify and Use Lehigh in all Brickwork. Remember the Mortar Joint is an Important Factor in the Wall.

Use Lehigh and Cease to Worry.

It Assures Satisfaction Under All Conditions.

LEHIGH CEMENT

dition of business were recently made at a meeting of the Sanitary Potters' Association in Atlantic City, N. J. A. M. Maddock, president of the association, declared that most all of the reports received from the potters were of an optimistic nature and that indications pointed to a very busy season. On account of the uncertainty of the price of raw material it was stated that prices of the manufactured ware were increasing. Most of the business transacted at the meeting was of a distinctly routine nature.

Word has recently been received of the death of Henry P. Cook, former pottery manufacturer of Trenton, N. J. Mr. Cook was at one time owner of the property now ocupied by the John Maddock's Sons Company, at Coalport, the plant then being known as the Jersey City China Company. Upon selling out to the Maddock Company, Mr. Cook erected a large cold storage warehouse on New York avenue, near the canal and North Olden avenues. Since retiring from active business he spent much of his time in traveling.

NEW YORK

The Bayard Brick Company has been organized and will operate the plant formerly operated by the Reilly Brick Company at Stony Point, N. Y. Bayard Fonda of Stony Point and J. V. Dolan are the principal incorporators, of the new concern which has bought the equipment and property of the Reilly Brick Company. It is expected that operations will be resumed at the plant within a very few days.

The East Ithaca (N. Y.) brick yard, which has been closed since last November, resumed operations on May 4 with a force of seventeen men. During its idleness the plant has been rehabilitated, the buildings being remodeled and reconstructed and some new machinery installed. With the present equipment, this plant is able to reach a capacity of 25,000 brick per day. It is announced that two-thirds of the present output of the plant has been sold ahead.

The Central Clay Products Company, Beach Ridge, N. Y., is making improvements in its equipment with a view of doubling the capacity of its plant. The work of making these improvements is progressing rapidly, and it is expected will be completed early in the summer. Three new kilns are being added to the five already at the plant, and in addition to these, four more kilns will be built during the coming summer. The company has sold its entire output for the next two years.

OHIO

The English Hill Coal Company, of Shawnee, Ohio, will handle brick and other building materials, as well as coal. The company was recently incorporated by Joseph G. Moulton and others, with a capital stock of $10,000.

Robert P. Harkins, of the Cincinnati Clay Products and Supply Company reports a slowness in demand for brick. Small orders seem to be the rule, according to Mr. Harkins, jobs of size being lacking as yet, although prospects, on the whole, are regarded very bright.

The Nelsonville Brick Company, of Nelsonville, Ohio, is going after the contract of furnishing the brick which will be used in paving along and between the tracks of the Ohio Electric Company in the vicinity of Springfield, Ohio. The work is to be done shortly.

W. J. Carmichael, of Willoughby, Ohio, general manager of the Winchester (Mass.) Composite Brick Company, was elected president of the Composite Brick Com-

pany of Jacksonville at the company's annual meeting held recently.

A charter has been granted the Peerless Clay Manufacturing Company, Port Nemer, Ohio, which has been organized with a capital stock of $100,000 for the manufacture of clay products. The incorporators are William R. Myers, W. B. Groucher, W. S. McCammon, Thomas J. Myers and John J. Burns.

Edward Orton, Jr., of the Ohio College of Engineering, Columbus, Ohio, and secretary of the American Ceramic Society, has been granted a year's leave of absence by the University officials. Mr. Orton will take up advanced research work in ceramics, and will probably publish his findings later.

Considerable stocks are in the sheds of many of the face-brick plants that are represented in Cincinnati and Dayton by the Moores-Coney Company. Notwithstanding this, however, the company states that most of the brickmakers are going ahead with plans for a big season, displaying every confidence in the eventual development of business to a satisfactory point.

Explosion of gas in a kiln was the cause of a fire recently at the plant of the American Building Brick Company, Cleveland, Ohio, which resulted in a loss of about $5,000. At the time of the accident there were about forty employes in the plant, but no one was injured, the report of the explosion enabling those who were nearest the bursting kiln to escape before being struck with flying brick.

The Cincinnati Brick Company has opened up and is running full. Mr. Powell of the company reports that it will make a million brick for use in sewer work in Cumminsville, a West Cincinnati suburb, and he figures that by the time the brick required for this job are finished, building will be sufficiently active to call for the company's reserve stock, as well as its usual output.

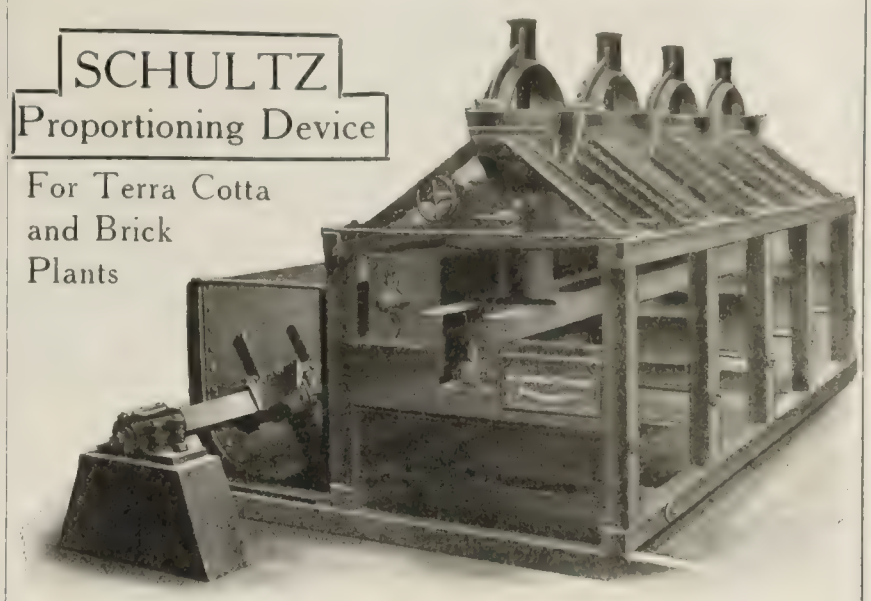
The Heidecker Brick Company, which is located to the north of Cincinnati, Ohio, supplies a large demand in that section, going as far as Hamilton and Dayton, has not found it necessary to resume operations as yet this season. This is due to the fact that, like several other local brick concerns, it carried over a considerable part of its winter stock, and this was available for all of the spring business that has presented itself.

The Harris Pressed Brick Company of Zanesville, Ohio, indicated its faith and belief in good roads, not only as affecting the brick industry, but on general principles, by a recent contribution of twenty-five dollars to the fund being collected by the Rotary Club of Zanesville. This club, which is composed of "live wires," is backing a movement for good roads in that vicinity, securing contributions of cash, men and teams, and is meeting with marked success.

A committee of the National Paving Brick Manufacturers' Association met in Dayton, Ohio, recently, for the purpose of discussing changes in the specifications for paving brick, which will be embodied in a report to be submitted to that organization when it meets at Dayton next October. The committee will continue its work during the summer meeting again for final action on the day preceding the convention. It is understood, however, that it will recommend no radical changes in the specifications as they stand at present, which seem to have given general satisfaction.

An unusually large contract for paving brick has just been closed by the Bessemer Limestone Company, Youngstown, Ohio. The order calls for 1,600,000 paving brick to be used in the construction of a six-mile highway leading from Kings-

SCHULTZ
Proportioning Device
For Terra Cotta and Brick Plants



A machine by which any number of different materials can be accurately proportioned and pugged. Particularly adapted to Terra Cotta factories where two or more clays, grog, barytes and color are to be mixed according to formulae.

Small parts, single machines and complete plants

A. L. SCHULTZ & SON
1675 Elston Ave.
CHICAGO ILLINOIS

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

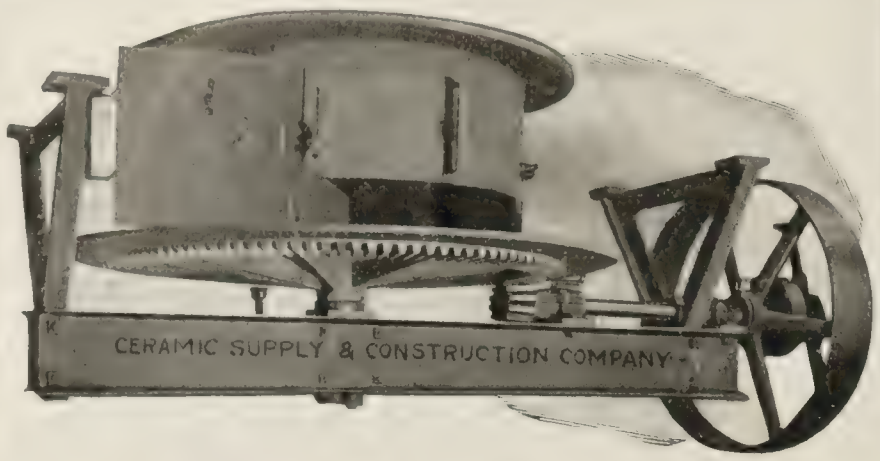
It burns just 75 per cent of the fuel that you are using now, to accomplish the same results.

It burns a low grade coal. There is no waste in the **ash.** Can be cleaned without chilling the kiln.

It permits of absolute control of heat, oxidation and reduction.

Bulletin B contains complete information on use of grate in kilns.

The Canton Grate Co.
1706 Woodland Ave. Canton, Ohio



"Bolt It to the Bin"

The Columbus Feeder

for automatically feeding

Crushed Clay to Dry Pans *and* Pulverized Clay to Pug Mills

is fast coming into general use. There's a reason. Let us show you—furnish the machine on trial.

Send for Circular.

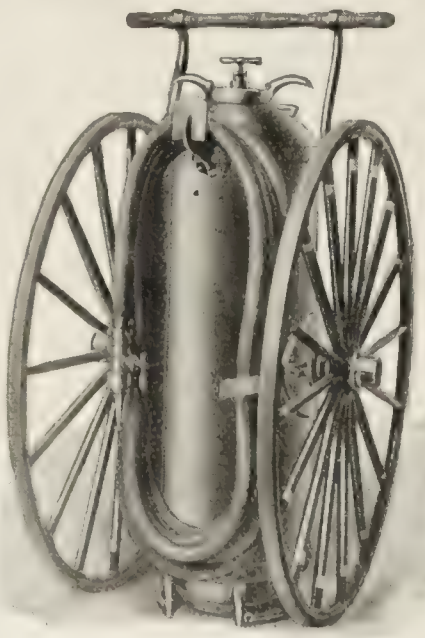
Ceramic Supply & Construction Co.

Columbus, Ohio

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.

40 Liberty St.

UTICA, N. Y.

town, N. Y., to a point outside the city where the great Ashokan reservoir is now being built. This reservoir is a large basin which the city of New York is constructing and from which it will pipe its water supply by means of ninety miles of aqueduct under rivers and over, through and around other obstructions between the basin and the metropolis. More than one hundred cars will be required to deliver the brick order.

Relative inactivity in building remains the rule in Cincinnati, Ohio, although there is a fair amount of work scheduled, as indicated by the latest report of the building commissioner's office. This report, covering the first four months of the year as well as April, shows that the gain over last year, in building for which permits were issued, was $898,946, or nearly a million dollars. The number of permits issued for that period last year was 4,414, while this year the number was 4,995. The gain in April over the same month last year was $353,062, the number of permits issued being 1,658, representing a valuation of $1,317,484. The outlook, therefore, is undoubtedly good as compared with last year, but so far improvement has not been especially noticeable.

More than seventy men are being worked by the State of Ohio at its brick plant at Junction City, turning out building brick for anticipated use on buildings to be erected at the insane hospital and the state penitentiary. Convicts do all of the work of the plant, twenty-five additional men having been sent from the penitentiary to the plant recently. It is expected that an output of 25,000 brick a day will be attained in a short time. The plant also turns out paving brick, of which more than 2,000,000 are now on hand in the yards, ready for delivery to the state highway commission as soon as required on contracts. Eight kilns are now being operated at the plant, and the lease on the ground used was recently renewed for a year, with the privilege of renewal for five years, indicating the intention of the administration board to maintain the plant for a considerable period if it proves to be profitable.

OKLAHOMA

N. S. Sherman and E. J. Corley, of Oklahoma City, Okla., have organized a $100,000 concern to build a sand-lime brick plant at Miami, Fla.

ONTARIO

The James Frid Brick Company, Ltd., Toronto, Ont., has been granted a charter to carry on a general contracting business, and to manufacture and deal in brick, tile, sewer pipe, terra cotta, and other kinds of clay wares. The company is capitalized at $100,000, James Wm. Frid being the chief incorporator.

The Canada Brick and Fireproofing Company, has been incorporated under the laws of Ontario, the directors of the company being K. McWhinney, Toronto; W. H. Parsons, Montreal and S. J. Plant, Toronto, the latter being managing director. The new company's plant will have a capacity of about 150,000 wire-cut brick per day.

OREGON

The contract for the matt glaze brick for the Elks' Club building at Klamath Falls, Ore., was awarded to the Steiger Terra Cotta and Pottery Works of San Francisco, Cal.

Building in Portland, Ore., for the month of April showed considerable improvement over the preceding months of 1915; and, though not so large as some build-

ers hoped for, the April total of $559,415 is, with one exception, the best the city has had since last September.

The Pacific Face Brick Company of Portland, Ore., reports a steady demand, especially for face-brick. This company supplied 290,000 face-brick for the Couch and Shattuck school buildings in Portland, a large amount for a school at Gresham, and for some fraternity buildings at Corvallis.

PENNSYLVANIA

Tobias and Sheridan, brick manufacturers, operating a large plant in West Hamburg, Berks county, Pa., have resumed operations after being idle since last October. The plant is one of the largest in the Schuylkill valley.

John B. Myers, president of the New Hope Vitrified Brick Company, New Hope, Pa., recently announced that operations at Huffnagle Station will be resumed very shortly.

The city of Reading, Pa., has awarded contracts recently that will aggregate $143,000, chiefly for paving. Fehr and O'Rourke were awarded one of the contracts for paving with vitrified brick certain streets, the amount of the contract being $28,430.16.

Facing the new Pennsylvania Railroad freight station, between Federal and Anderson Streets, Pittsburgh, Pa., the iron posts around the city park are being replaced with white brick columns of artistic design. The station is practically completed.

The Hamburg Vitrified Brick Company have recently vacatel its offices in the Fidelity Mutual Life Building, Philadelphia, and has established headquarters with the Mack Paving and Construction Company at Twentieth street and Sedgley avenue, in that city.

Jacob Schoenly, a bricklaying contractor, of Boyertown, Pa., has been awarded one of the largest contracts in his career. The contract calls for the erection of a store building in Reading. The work will require 1,000,000 brick and keep thirty-five of his bricklayers busy for some time.

The Equitable Brick Manufacturing Company, Ltd., Philadelphia, has recently sold ground to Hugh C. Forbes, on the north and south sides of Hazel avenue between 58th and 59th streets, in that city, each plot having a frontage on Hazel avenue of five hundred feet, with a depth of sixty-five feet.

The brick business in the Schuylkill valley, Pennsylvania, is most promising. The plants of the Glen-Gary Brick Company, at Shoemakersville, the Reading Shale Brick Works at Wyomissing and the plant at West Reading, it is predicted, will run full time during the entire season.

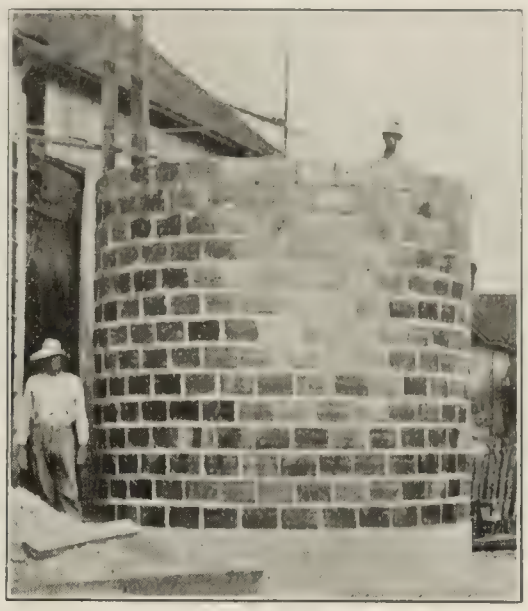
Hiram Swank's Sons, extensive manufacturers of fire-brick and fire-clay products, at Johnstown, Pa., have secured a lease on two hundred acres of land in the vicinity of Dean, Pa., and are engaged in taking borings. It is the intention of the company to develop the tract. The fire-clay will be shipped to Johnstown for use at the company's plant.

The Reynoldsville Brick and Tile Company, Reynoldsville, Pa., is erecting a new two-story office building at its plant, in which brick will not only be used for the exterior walls, but will also decorate the interior of the building. The plan is to use different kinds and grades of brick to show the visitor or prospective customer the various effects possible with the Reynoldsville brick.

Governor Brumbaugh of Pennsylvania, recently an-

Do you make Silo Blocks?

Why Not?



There's lots of money in it if you make the right kind.

DURO

Everlasting Clay Block Silos

will increase your income.

Note the Vertical Rod In Door Frame.

Construction is simple, yet it makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

Our door-frame construction is a marvel.

We will allot certain territory not already taken and sell the right to use our patent device. Our price is low—territory going fast—better write us quick and let us tell you more about it.

MOWRYSTOWN BRICK & TILE CO.
MOWRYSTOWN, OHIO

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York



Type B—¾ cu. yd. Erie Shovel.

The object:

To Build a Better Shovel

We know just as well as you know that it would be to no good purpose to put another shovel on the market and have it merely "just as good." To justify its existence it had to be better.

And the ERIE Shovel is better—in many ways.

All we want to do is to get you to say: "Well, I am going to investigate the ERIE." The opportunity to show you how and why the Erie is the "better" shovel you have been looking for is all we ask. Catalog A gives the facts and figures—where shall we send your copy?

BALL ENGINE CO., - Erie, Pa.

TEN for a cent

Gummed labels to stick on mail matter and express parcels.

Build with Brick

$1.00 per thousand

any one of the three or assorted any way you may choose.

Pave with Brick

Printed in dark blue on white paper, perforated like postage stamps and padded in 1,000 lots.

Tile Your Farm
WITH EVERLASTING BURNED CLAY

Send your order in now—stick a sign on every envelope and package that leaves your office.

BRICK & CLAY RECORD

445 PLYMOUTH COURT CHICAGO

nounced that he would proclaim Wednesday, May 26, as "Good Roads Day" for the state This announcement was made after a conference with Highway Commissioner Cunningham, who called attention to the fact that thirty-eight counties of the state have formed organizations for county good road days and to the furtherance of the same movement in other counties.

The McAvoy Vitrified Brick Company, Arch street, Philadelphia, reports that business has been very quiet during the past several weeks. It is declared that, while there have been plenty of contracts let for new buildings and structural work, the season has been very late in getting under way. Mr. McAvoy, president and treasurer of the company, however, is very optimistic regarding the future and states that, in his opinion, a few weeks will find business normal.

It has recently been announced at the office of the National Fireproofing Company, in the Land Title and Trust Building, Philadelphia, Pa., that the contract for supplying hollow tile to be used in the construction of the new high school building which will soon be under way at Coatesville, Pa., has been secured. The company has also closed contracts with the Lehigh Coal and Navigation Company for supplying material to be used in the construction of several buildings in the vicinity of Lansford, Pa.

RHODE ISLAND

Operations are now on in earnest at the plant of the Barrington Brick Company, Barrington, R. I., which, according to custom, has been closed since early fall. The concern has several good orders in hand.

TEXAS

The Dabney Brick Company, Galveston, Texas, announces the closing of a contract to supply between 400,000 and 500,000 common brick to be used in constructing the new addition to the Ball High School in that city.

TENNESSEE

The brick plant of the Oliver Springs Coal and Clay Company, Oliver Springs, Tenn., has resumed operations after being shut down since last summer. The company has many orders on its books and is now in operation night and day.

The Key-James Brick Company, of Chattanooga, Tenn., has been awarded the contract for brick to be used in construction of the new government building at Shelbyville, Tenn., which is to cost $50,000, and has also been given the contract for the brick for the Fayetteville (Tenn.) postoffice. Another contract given the Key-James company calls for 200,000 face-brick and 500,000 common-brick to be used in new buildings for the Berry Industrial school at Rome, Ga.

WASHINGTON

The city of Spokane, Wash., is in the market for three hundred and forty feet of twelve-inch sewer pipe.

WEST VIRGINIA

The stockholders of the Thornton Fire Brick Company held their annual meeting at Grafton, W. Va., recently and re-elected the entire official board. Thomas J. McAvay, of Grafton, is president, and D. R. Potter, of Clarksburg, W. Va., is general manager.

E. P. Elzey, who for the past several years has been associated with the United States Roofing Tile Company, Parkersburg, W. Va., in the capacity of salesmanager, has resigned his position with that concern, and with H. N. Ragland, a former salesman with the same company has opened offices and display rooms in the Union Trust Building, Parkersburg,

under the firm name of E. P. Elzey. Mr. Elzey reports the number of orders received as being encouraging.

WISCONSIN

Gunther Brothers, Port Washington, Wis., have resumed operations at their brick plant, this being the earliest date that this company has ever commenced making brick for the spring and summer season.

The Manitowoc Clay Company, Manitowoc, Wis., a new concern, has begun work on the construction of its buildings and kilns and expects to be in operation within six weeks.

WYOMING

A contract for 1,500,000 brick has been let to the Sheridan Press Brick and Tile Company, Sheridan, Wyo., by the Edward Seerie Company to be used in the construction of the Sheridan Sugar factory. With 500,000 brick on hand and nearly that many more ready to be burned, C. F. Keisel, the manager of the brick company, states that it will be an easy matter to handle the contract, as well as to take care of all orders that may come in from the city, with the present force of men. The company has three kilns with a capacity of 1,050,000 brick. A small kiln in addition to the three large ones has a capacity of 70,000, making a total capacity for the plant of 400,000 per month.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

Unless all signs fail, domestic pottery manufacturers will experience, during the last two quarters of the current year, the busiest season in their history. According to the most reliable information obtainable, the importation of china and pottery ware from Germany for this year is now closed, and no more will come. Conditions in the Austrian china districts are about the same as they have been for the past several months, and little if any ware will come from that quarter. The port of Rotterdam is closed, and it is from that point that china shipments have been coming to the United States. French and English goods can be imported, but the volume being made for export to this country is somewhat uncertain. That production has been decreased in those countries is not questioned.

It is also asserted upon most excellent authority that, where German officials have assumed authority either in France or Belgium, a war tax has been imposed on manufacturers in no small amount. Where ware from these factories is sold for export, and the lines are represented in this country, the importers are not urging large orders for high-class merchandise, preferring to sell just a little here and there, so as to assist in keeping the foreign plant in nominal operation. All of these facts show that imports will be exceedingly low this year, and the demand for American lines of dinner ware and high-class specialties will be the heaviest ever experienced in the life of the domestic industry.

Every local affiliated with the National Brotherhood of Operative Potters is now voting in a general referendum

Stop Wasting Fuel!

You can if you will install the

Hook System of Burning Clay Products

This is not an experiment but it has proven its worth in scores of kilns. One company burned a 22-foot kiln of drain tile in 26 hours, including time for water smoking and high fire. Another company burns drain tile in less than 30 hours, using only 6 tons of coal, and including watersmoking period. Still another reduced its burning time on a full kiln of brick from 168 hours to 77 hours.

We can give you countless references—but better still we guarantee satisfaction. All we ask is that you investigate our system—there will be no obligation on your part.

We will reduce your cost of burning—will greatly increase the capacity of your present kilns due to turning them oftener—will improve the quality of your ware.

The Hook System

Can be installed in your present kiln—round or rectangular, old or new.

Ask us more about it.

Hook Patent Kiln Co.

Main Office: Vigo, Ohio

Canadian Office:

250 Dufferin Street Toronto, Ont.

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press

Auger Brick Machines

Down Delivery Tile Mills

Oil Burning Equipment

Crude Oil Engines

Piano Wire Screens

Dry and Wet Pans

Soft Clay Brick Machines

Pug Mills

Wet and Dry Clay Disintegrators

Smooth and Conical Roll Crushers

Wood Moulds

Trucks and Barrows

Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.

20 W. Jackson Blvd. Chicago, Ill.

election for officers of the organization. It is said that over 7,000 ballots have been prepared, and that the Australian system of voting is being followed in every local. These votes and tally sheets are immediately forwarded to the national headqarters at East Liverpool, Ohio, where the result is announced as soon as the last vote is received. Edward Menge, president of the brotherhood for the past few years has opposition in Frank W. Gratton, also of East Liverpool, while first vice-president, Frank Hutchins, of Trenton, N. J., and secretary-treasurer, John T. Wood, of East Liverpool are without opposition. The official vote will be announced during the latter part of the present month.

The reason for decreasing the capital stock of the Knowles, Taylor and Knowles Pottery Company from $1,000,000 to $500,000, it is declared, is to avoid paying taxes on such a large capital stock, when there was no need for such. Charles Coburn, formerly county auditor of Columbiana county, Ohio, in which county East Liverpool is the largest city, is now in charge of the general offices of the Knowles concern, occupying the desk that was formerly used by Col. John N. Taylor, when he was alive, and president of the company. The shutting down on taxes was one of the first matters given attention by Mr. Coburn when he assumed his new position.

Charles F. Gosser, president of the Pope-Gosser China Company, of Coshocton, Ohio, announces the starting of work on the construction of an addition to the pottery, the object being a new building wherein additional clay workers will be employed. The new building will contain over five thousand feet of floor space, and is required on account of the increased business being offered this concern. Between fifty and one hundred more workers will be engaged after the building is completed. A high grade line of dinner ware is manufactured by this company, together with a number of specialties.

Various committees are now busy at Alliance, Ohio, working out the details for the erection of a thirty-kiln pottery in that vicinity. The men back of the project have not been announced, all names that have so far been made known, being identified with the Alliance, Ohio, Board of Trade. The building of a plant of this size and the working capital required for such an enterprise, will run close to $1,000,000.

That American pottery manufacturers are planning to get all the new business they can, is shown by the action of the more progressive manufacturers, who have just placed orders for new dinner shapes. Modelers in the East Liverpool, Ohio, district are now at work on these, the majority of which are plain effects, such as would take the place of imported designs.

In addition to the new shapes, at least one manufacturer is planning bigger business, and is now increasing the capacity of his plant, this being the Pope-Gosser Company, at Coshocton, Ohio. This company will increase the capacity of its decorating department seventy per cent in anticipation of increased trade during the latter part of the year. A new building is being erected at the plant with this end in view.

In the manufacture of exclusive china dinnerware, the Buffalo Pottery Company, of Buffalo, N. Y., will enter the field within a few months. Plans to this end were announced earlier in the year, and now operations at the new pottery will start at a very early date. This will mean that a large volume of china dinnerware busi-

ness that formerly went to foreign countries will be given to American manufacturers.

Thomas J. Duffy, for over a decade president of the National Brotherhood of Operative Potters, and who retired from that organization to take a political position with the Commonwealth of Ohio, has refused the request of Governor Willis of that state to resign as a member of the Ohio Industrial Commission, to which board he was appointed by former Governor George Cox.

Large mail order houses declare they are unable to get pottery from sources at which they have been in the habit of buying abroad, and in a number of instances these houses have sent samples to eastern Ohio potteries, asking firms there to duplicate the item as closely as possible. This also shows that new business is being offered the domestic manufacturers.

The Knowles, Taylor and Knowles Pottery Company, at East Liverpool, Ohio, is bringing out decorations on dinnerware that have been designed to compete with imported lines. With shapes and decorations, this plant will be in a position to supplant many open-stock import patterns now being used by retail buyers.

Strong efforts are being made to locate a pottery in the South, close to large deposits of clay and kaolin. An East Liverpool architect, well known as a pottery builder, is being petitioned to assist in the building of a plant in Tennessee. So far, no Ohio manufacturers are interested.

Domestic pottery manufacturers state that the past two weeks has witnessed a decided improvement in orders, the majority of which are for immediate shipment. The Eastern Ohio potteries are working to about seventy-five per cent of capacity.

At Akron, Ohio, the Summit China Company is to increase its kiln capacity at once, and will also place on the market a new dinner shape made from a new body and glaze for the fall trade.

Freight Tariffs and Troubles

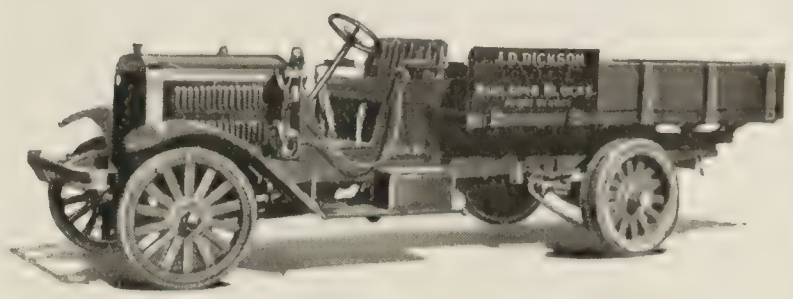
(*Continued from page* 967)

The complaint in this case was filed with the commission on March 13, 1914. Fifteen carloads of brick were involved in the movement, which had a total weight of 980,968 pounds, the rate charged being at ten and three tenths cents per hundred pounds, making the total charges $1,010.42.

In handing down their opinion in case No. 6818 of the Greer-Beatty Clay Company, Magnolia, Ohio, against the Pennsylvania Railroad Company, et al., the Commissioners say: "Rate of $1.90 net ton charged for the transportation of hollow building blocks in carloads from Magnolia, Ohio, to Olean, N. Y. and St. Marys, Pa., not found to have been unreasonable. Complaint dismissed." The complaint in this case was filed with the commission on April 17, 1914. Reparation was asked and a "reasonable" rate for the future.

The Commissioners have suspended until November 1, 1915, the operation of certain schedules contained in a large number of tariffs. The suspended schedules contained increased rates on carloads of straw from St. Louis, Mo., and other points to various destinations in

KisselKar Trucks Always on the Job



KISSELKAR TRUCKS are invariably spoken of by drivers and garage men as the best trucks they know.

And it's true that a KisselKar Truck is of better material, better built, better balanced than the average truck. It is a staunch, powerful, dependable, scientifically constructed vehicle—**one that is always on the job.**

KisselKar Trucks are furnished in six sizes and with bodies to suit any business or special requirement. The loading capacities are 1500 lbs., 1, 1½, 2, 2½, 3½ and 6 tons, respectively.

KISSELKAR TRUCKS

In Six Sizes

Intelligent care is exercised by the Kissel Motor Car Company to furnish the **exact** truck needed by a customer.

Individual conditions, as well as those common to the line of business to be served, are minutely considered and advice given accordingly.

Write fully regarding your haulage problem—the mileage, the loads, the nature of cargo, the condition of roads, the number of stops, your present haulage equipment and all other facts that bear. **And don't fail to ask for our illustrated portfolio.**

Kissel Motor Car Co., 568 Kissel Avenue, Hartford, Wis.

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Cincinnati, Pittsburgh, Cleveland, Detroit, San Francisco, Los Angeles, Seattle, Buffalo, Rochester, Columbus and 300 other principal points.

We Train Employes In Efficiency By Personal Instruction



"How To Analyze Your Business"—It's a booklet that's made for you.

We Teach You

—personally—the principles of applied efficiency in the manufacture of your product.

Then We Teach

—your employes that every wasted minute or motion and every wasted ounce of material **keeps their wages down to a minimum.**

This Teaching Is Personal

—Our trained corps of experts goes to work in your plant, after you have learned enough of our Service to believe in it.

Our Service Embraces:

—Industrial Organization, Waste Reduction, Labor Management, and Control, Employes' Cooperation Methods, Production Methods, Costs.

We solicit your invitation to have a Representative call.

L·V·ESTES INCORPORATED
"RAISE WAGES WHILE CUTTING COSTS"
1834 McCormick Building, Chicago

central freight association territory. Supplement Nos. 17 and 18 to Cleveland, Cincinnati, Chicago & St. Louis Railway Company tariff, I. C. C. No. 6354 have also been suspended until November 1. The suspended schedules named increased switching charges on traffic switched at Alexandria, La.

REPARATIONS

N. O. Thomas has been allowed reparation amounting to $52.00 by the commission against the Houston East and West Texas Railway Company, et al. Reparation was allowed because of an unreasonable rate applied on one carload of common brick shipped from Center, Texas, to Logansport, La., on November 11, 1913.

Haskell and Barker vs. the Chicago, Rock Island and Pacific Railway Company, et al. A refund of $6.45 was allowed because of an unreasonable rate applied on one carload of ground fire-clay shipped from La Salle, Ill., to Michigan City, Ind., on May 5, 1914.

The Old Bridge Enameled Brick and Tile Company vs. the Ocean Steamship Company, of Savannah, et al. A refund of $5.00 was allowed on account of an excessive rate applied on two carloads of kaolin forwarded from Edgar, Fla., to Old Bridge, N. J., on November 12 and 24, 1913.

Auburn Shale Brick Company vs. the Philadelphia and Reading Railway Company. A refund of $22.59 was allowed on account of an excessive rate applied on a shipment of brick from Gettysburg, Pa., to Wilmington, Del., on January 9, 1915.

Maurice A. Knight vs. the Baltimore and Ohio Railroad Company, et al. A refund of $58.26 was allowed on account of an unreasonable rate applied on five carloads of brick shipped from Akron, Ohio to Hamilton, Ont., Canada, during the period from May 6 to June 18, 1912.

National Fireproofing Company vs. the Raritan River Railroad Company, et al. A refund of $3.63 was allowed on one carload of hollow building tile because of an unjust rate charged. The shipment was made from Amclay, N. J. to Waynesboro, Pa., on August 8, 1914.

Changes in Freight Rates

The following freight tariffs, affecting clay products, have become effective since our last issue:

From Eastern Points

From Auburn, Hamburg and Pine Grove, Pa., brick, to Bound Brook, N. J., $1.26 per net ton.

From Bakersville, N. J., common brick, to Philadelphia, Pa., stations, 95c per net ton.

From Beech Creek, Krebs, Orviston, Snow Shoe, Wallaceton, Irvona, Clearfield, Bigler, Lock Haven, Mill Hall, Mahaffey, Philipsburg, Pa., and other Pennsylvania points, brick and articles taking same rates, to Syracuse, Warners, Belle Isle, Solvay, Skaneateles Junction, Auburn, Seneca Falls, Waterloo, Martisco, Lock Berlin and Cayuga, N. Y., and rate points, $2.10 per net ton.

From Bradford, Butler, Cowan, Falls Creek, Johnsonburg and Kushequa, Pa., brick, to East Salamanca, Salamanca, Irvine Mills and Limestone, N. Y., 79c per net ton.

From Buffalo, Blasdell and North Boston, N. Y., and Sykes, Pa., brick and clay products, to Betula, Lyman Run, Simmons, Sykes, Norwich and Rich Summitt, Pa., $1.52 per net ton.

From Frederick, Md., common brick, to Lynchburg, Va., $2.56 per net ton.

From Gettysburg, Pa., common brick, to Culpeper, Va., $2.56 per net ton.

From Kutztown, Pa., brick, to Allentown, Pa., 64c per net ton.

From Mechanicsville, N. Y., common brick, to Binghamton, N. Y., 91c per net ton.

From New York and Brooklyn, N. Y., stations, also Jersey City, N. J., and Long Island, N. Y., clay, to Cornwall, Ont., 15.8c per cwt.

From North Boston, N. Y., brick and clay products, to Lockport, Niagara Falls, North Tonawanda and Suspension Bridge, N. Y., 74c per net ton.

From York (Pa.) stations, Emigsville, New Cumberland and Lemoyne, Pa., brick, to Bellefonte, Pa., $1.89 per net ton.

From York (Pa.) stations and Stony Brook, Pa., brick, to Westville, N. J., $1.60 per net ton.

From Middle West Points

From Blue Island, Burr Oak, South Chicago and Pullman "Y," Ill., brick (except bath or enameled), tile and clay, to Cummings, Pullman Junction, Burnside, West Pullman, South Chicago and Chicago, Ill., 26c per net ton.

From Findlay and Ottawa, Ohio, brick, to Belmore, Ohio, 53c per net ton.

From Heron Lake, Minn., brick (except bath and enameled) and articles taking same rates, to Box Elder, Capa, Cottonwood, Midland, Nowlin, Owanka, Phillip, Powell, Quinn, Rapid City, Underwood, Van Metre, Wall and Wasta, S. D., 18c per cwt.; to Ft. Pierre, S. D., 15¾c per cwt.; to Teton, S. D., 16¾c per cwt.; and to Wendte, S. D., 17¾c per cwt.

From Menomonie, Wis., brick (except bath or enameled) and articles taking the same rates, to East St. Louis, Ill., and St. Louis, Mo., 10½c per cwt.

From Ottawa, Ill., brick (except bath and enameled) and other clay products, to Watertown, S. D., 16½c per cwt.

From Round Knob, Ill., clay, to Paducah, Ky., 50c per net ton.

From St. Paul, Minnesota Transfer, Minneapolis, Stillwater, South Stillwater, Oak Park, Coon Creek, Anoka, Dayton and Elk River, Minn., brick (except glazed, enameled or bath) and other clay products, to Ashland and Washburn, Wis., 7c per cwt.

From Streator, Ill., brick and articles taking the same rates, to Ripon, Wis., 7c per cwt.; to Sharon, Wis., 6c per cwt.

From Toledo, Ohio, brick, to Belmore, Ohio, 63c per net ton.

From Western Points

From Boone, Des Moines and Redfield, Ia., drain tile, to Omaha and South Omaha, Neb., 7c per cwt.

From Boone, Des Moines and Redfield, Ia., brick and articles taking the same rates, to Omaha and South Omaha, Neb., 6c per cwt.

From Buffalo, Iowa, brick, paving blocks, hollow building tile, fire brick and fire clay, to Cudahy, Wis., 5.3c per cwt.

From Council Bluffs, Ia., brick (except bath and enameled) and articles taking the same rates, to Albright and South Omaha, Neb., 2½c per cwt.

From Deadwood, Rapid City and Sturgis, S. D., brick (except bath and enameled), clay conduits and articles taking the same rates, to Des Moines Ia., 26c per cwt.

From Des Moines, Ia., brick (except bath and enameled), clay conduits and articles taking the same rates, to Deadwood, Rapid City and Sturgis, S. D., 26c per cwt.; to Fremont and Lincoln, Neb., 9c per cwt.

From Fort Dodge and Boone, Ia., brick (except bath

Better Service at Less Expense

AN EXPERIENCE of thirty-six years warrants our saying when you adopt Gandy Stitched Cotton Duck Belting you get the best service at the least expense.

Cotton, the foundation of Gandy Belt, is low in price, and while maintaining strictly the high quality of our belting, we are able to sell it for about one-third the price of leather belting and much less than the price of rubber belting, while it does the work equally as well.

Gandy Stitched Cotton Duck Belting

Satisfied users in all industries is the best proof of the good service obtained from "Gandy," the Pioneer Stitched Cotton Duck Belt. We will gladly send you samples, prices and full information.



The Gandy Belting Co.

732 W. Pratt St.,
Baltimore, Md.

New York Office
36 Warren Street

THE MARTIN BOILER GRATE

The first cost is

Small

The second cost is

Next to Nothing

The coal-labor waste is

NOTHING

That is the analysis of

Martin Shaking Grates

We will prove these terse statements, to all users of unsatisfactory grates—to you

ELDORA PIPE AND TILE CO.
Drain Tile.

Eldora, Iowa, April 10th, 1914.

Martin Grate Co.,
Chicago, Ill.

Gentlemen:

In reply to your letter of the 6th will say that we have had your grates under our boilers a little over two years. We have been able to maintain a more constant head of steam and have had greater efficiency from our boilers. We have burned the cheapest coal we could buy and have kept steam, while with our old straight grates we could not keep steam with a much better grade of coal.

We have had no repairs since the grates were first installed.

Yours truly,
Eldora Pipe & Tile Co.,
(Signed) C. A. Reaver, Secy.

— Exact Information —
—will not cost—will not obligate—we have it—
—just ask—

The Martin Grate Co.
347 South Dearborn St. Chicago

and enameled) and articles taking the same rates, to Sioux Falls, S. D., 8c per cwt.

From Fort Dodge and Lehigh, Ia., brick (except bath and enameled) and articles taking the same rates, to Arlington, Cedar Bluffs, Ceresco, Davey, Lincoln, Fremont, Swedeburg and Wahoo, Neb., 9c per cwt.

From Fremont and Lincoln, Neb., brick (except bath and enameled), clay conduits and articles taking the same rates, to Des Moines, Ia., 9c per cwt.

From Sioux City and Leeds, Ia., brick and clay products, to Omaha and South Omaha, Neb., southbound, 4c per cwt.

From St. Louis, Mo., enameled brick, to Chicago, Hawthorne, Clyde, Berwyn, Riverside, Brookfield, Congress Park and La Grange, Ill., 8.4c per cwt.

From Southern Points

From Augusta, Ga., vitrified brick, to Ridgeland, S. C., 3½c per cwt.

From Paducah, Ky., brick, to Brookport, Ill., 60c per net ton; to Metropolis, Ill., 70c per net ton; to Perkins, Brownfield, Golconda and Ozark, Ill., 90c per net ton; to Carterville and Herrin, Ill., $1.10 per net ton; to Carbondale, Ill., $1.20 per net ton.

From Ryttenburg, S. C., common brick, to Winston-Salem, N. C., $2.60 per thousand.

Brick Buildings Gain in Cleveland

Just what the modern tendencies in building construction are, is a hard problem to accurately solve. In residential structures I would say that, in this locality, at least, frame construction is slowly giving way to brick and stucco. More consideration is being given to sanitation, heating and ventilation than ever before, and there is a decided improvement in the architectural features, writes Virgil D. Allen, in the Cleveland "Plain Dealer."

The other buildings were very much cluttered up with fancy cornices, porches, etc., while the interior finish was full of panels, bead work and moldings. Now the lines of finish are more severe. There is also some disposition to use the bungalow type of residence. There has been a large increase in the tenement type of residential structures in the last few years, but I believe the time is approaching when we will return to the separate house.

In factory and mill buildings are to be observed the greatest changes. There has been a large increase in the size of such buildings, while more attention is given to the lighting, ventilation and sanitary facilities, not only for humanitarian reasons, but because of the demonstrated economic value of such equipment. The modern factory is being provided with rest rooms, lockers, hospital facilities and a number of comforts and conveniences for the employes, which a few years ago would have been considered foolish and unnecessary.

Much more attention is being given to the adaptability of the building for the business to be conducted therein. In times past the practice was to build and put the processes into it. Now the usual method is to lay out the processes and build the building around them. There is also a marked tendency to give attention to the architectural appearance of industrial plants, not only as applying to the individual units, but the entire plant arrangement, which is in response, as I believe, to a growing feeling that it costs little if any more to have a good looking plant than it does to have one which is shabby

and poorly designed, and the psychological effect of good buildings on both employes and patrons is now an acknowledged fact. It is the cheapest and at the same time the best advertising for an industrial plant to be housed in well-planned and properly constructed buildings.

There is an increasing use of fireproof materials in building construction, and more and more attention is given to the elimination of the fire hazard, not only to property but to life. This is effected by the use of sprinkler systems, the elimination of all unnecessary woodwork, the use of metal sash and wired glass in windows, the protection of exposures by fire doors and shutters, the enclosing of all vertical openings for belts, elevators and stairways by fire-resisting partitions, and close attention to the construction of electrical and heating installations. A very large amount of our fire loss in mercantile buildings is due to the fact that in the older buildings the stairways and elevator shafts are open from top to bottom of the building, thereby creating a number of draft stacks in each building so that in the event of fire the fire and smoke can be carried rapidly to all parts of the structure, and by the time the fire department arrives they are called upon to fight a fire rapidly spreading throughout the entire building rather than a fire confined by proper subdivisions to the place of its origin.

Sizing up the whole situation I believe that in every grade and class of buildings there are decided improvements being made in their arrangement, sanitation, ventilation, fire protection and appearance.

The following table shows the value, kind and trend of Cleveland building construction during the past twenty-five years:

VALUE OF BUILDING OPERATIONS.

Period	Brick	Wood	Per cent. Brick	Per cent. Frame
1890-1900	$17,899,219	$23,060,448	43.5	56.5
1901-1910	54,264,612	34,191,917	61.5	38.5
1911-1914	47,717,487	26,846,468	64.0	36.0
Total	$119,881,318	$84,098,833	59.0	41.0

Fire Protection Association Passes Resolutions

At the annual meeting of the National Fire Protection Association, held in New York City, N. Y., May 11, the following resolutions were passed in connection with the association's warfare against the needless sacrifice of human lives and property by fire:

(1) The encouragement of fire-resistive building construction through the adoption of improved building codes by all states, cities and towns; the inclusion in such codes of adequate rules for exit facilities based on the occupancy for all buildings, and the general recognition of the fact that although fire-resistive construction is of the greatest possible importance, it is of itself not sufficient. The lesson of the greatest factory fire of the year is that large industrial buildings, must be sub-divided by fire walls and must have adequate means of stopping fires in their incipiency.

(2) The adoption of laws or ordinances requiring the installation of automatic sprinkler systems as fire extinguishing agents in all factories, commercial establishments and city blocks. The adoption of ordinances requiring the construction of fire division walls not only as a property protection device but as providing the best life-saving exit facility.

(3) The establishment by law of a Fire Marshal in every state, who shall not be a mere political office holder but a

A Third Series of

10 Good Reasons

why you should install the

Underwood Producer Gas Burning System

PATENTED

21. No coal or ashes to be seen scattered around the yard, thus assuring absolute cleanliness about your premises.

22. Produces at all times the highest percentage of No. 1 ware.

23. With this system applied to kilns, you can likewise, with only a nominal expense, gasify any furnace dryer.

24. Where waste heat dryers are employed, a clean, pure atmosphere is obtained from the cooling kilns, thus preventing scum and whitewash on the ware and deterioration of the cars.

25. Under certain conditions, coal of a poor grade, not usable for any other purpose, can be economically utilized with this system.

26. It removes uncertainties, also responsibility, and lifts a burden from the shoulders of the kiln men and superintendent.

27. This system gives you an accurate record of the amount or quantity of the fuel used each and every hour, or per day.

28. With this system every pound of coal is utilized to advantage, and no fine coal or coke, otherwise carbonacious matter, ever goes out with the ashes.

29. An absolute and perfect smoke consumer, affording the opportunity to burn clay products within city limits without being classed as a nuisance.

30. Do you realize that the Underwood Patented Producer Gas Fired Burning System requires absolutely no cost for up-keep or maintenance, there being no wear or tear whatsoever?

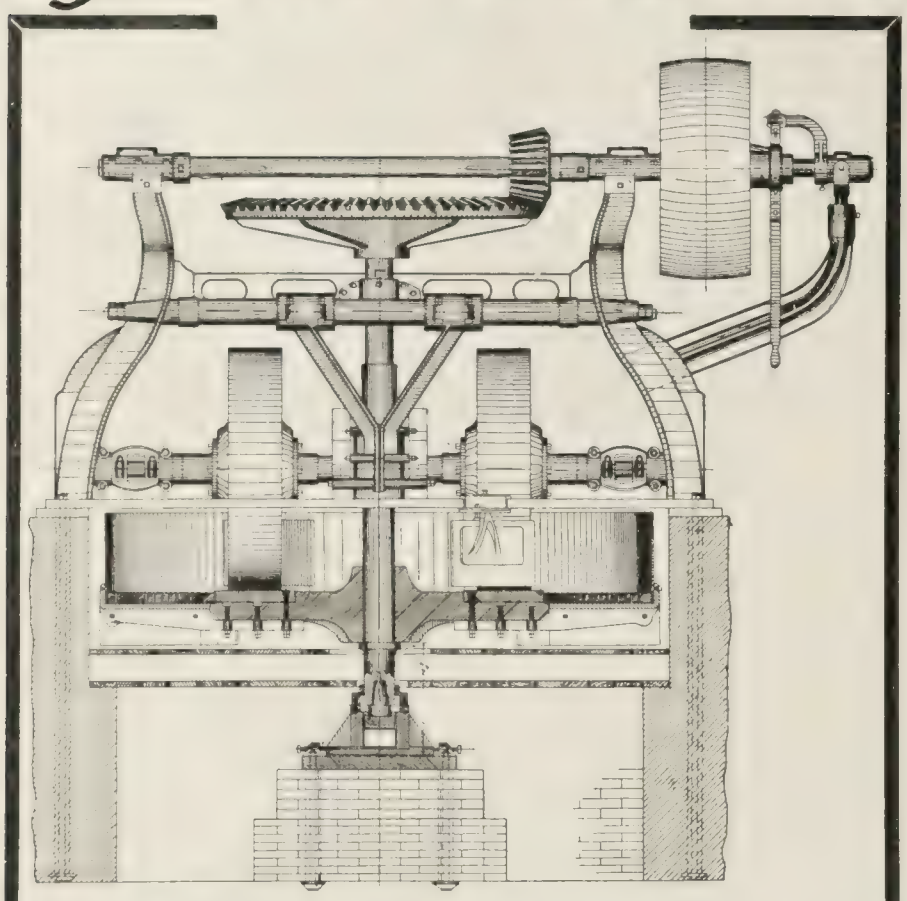
If you didn't read the two preceding series, get copies of the April 20th and May 4th issues of this paper and read them, or send to us for the complete list of "30 Reasons."

The Manufacturers Equipment Co.

Everything for the Clay Worker

Dayton, Ohio, U. S. A.

The Sensation of the Season



Stevenson's Ten-Foot Dry Pan

¶ The announcement made in the May fourth issue of "Brick and Clay Record" has caused a profound impression in the trade. Those who have had a chance to investigate have unanimously agreed that it's the

"Last Word" in Dry Pans

¶ This pan is built for heavy duty and it will give a greater daily capacity than any similar size pan on the market.

¶ We know, because we have built pans for years and we have an experience in this respect that is unexcelled.

¶ Get in touch with us **now** and let us prove that here's a profitable investment for you to make.

¶ Also ask us about our latest Tile Press that makes tile from 3 to 36-inch. It's a wonder.

THE STEVENSON COMPANY
WELLSVILLE, OHIO

"In the Heart of the Clay Industry"

trained man with trained assistants competent to direct the work as statistician, educator and prosecutor.

(4) The investigation of the cause of all fires by public officials, and the enactment of laws fixing personal liability for damage resulting from fires due to carelessness or neglect.

(5) The consolidation of all legal forces so as to provide for the systematic inspection of all buildings by local firemen, and technically trained building and factory inspectors so as to insure the vigorous enforcement of rules for cleanliness, good housekeeping, and the maintenance of safe and unobstructed exits, fire-fighting apparatus and other protective devices.

(6) The especial safeguarding of schools, theatres, factories and all other places in which numbers of people congregate or are employed.

(7) The vigorous state and municipal regulation of the transportation, storage and use of all inflammable liquids and explosives.

(8) A careful study of municipal water supplies, their adequacy and reliability with special reference to their adequacy in case of conflagrations.

(9) The universal adoption and use of the safety match.

(10) The education of children and the public generally in careful habits regarding the use of fire.

For the furtherance of the objects set forth in the preceding paragraphs, the association asks the co-operation of every citizen, and suggests that specific assistance can be rendered by each one doing his part in cutting down the fire loss by cleaning up the premises about the home, instructing the children, and so on, also leading others to follow the same plan by the distribution of literature, which can be obtained from the association.

The first resolution is of particular interest to the brickmaker and should have his utmost support.

Postal Savings Banks Extend Service

Every person in the United States ten years old or over may open an account in a postal savings bank after July 1st, according to an instructive leaflet on the postal savings system just issued by Postmaster General Burleson. This important extension of the service will be made possible by permitting persons living in communities so sparcely settled as not to justify the designation of their local post offices as regular postal savings banks, to open accounts by mail.

Governor Dockery, Third Assistant Postmaster General, who has direct supervision of postal savings, was so impressed by appeals from all over the country to open postal savings accounts by mail that he took up the task some weeks ago of working out a feasible and safe method for meeting a demand well illustrated in a letter from a Saline County Missourian, who resides many miles from a postal savings bank.

"Having a few hundred dollars saved from fifty years of hard and assiduous labor and skimping economy on the part of my wife and myself, we concluded to deposit it in the Postal Savings Bank of——. We wrote to the postmaster at that place and received reply to the effect that none but patrons of that office could deposit in that office which is very disappointing news to us. Our little farm is not large enough to support us and land is so high that it is impossible for us to buy more with what little we have saved and we are so old that we can't labor much now and we would be so glad to lay by at least enough to put us away in decency."

Under the plan adopted by the Postmaster General for opening accounts by mail an intending depositor, residing where

there is no regularly designated postal savings bank, will apply to his local postmaster, who will see that necessary identification data is prepared and forwarded to a nearby post office authorized to accept deposits. The intending depositor will then be given permission to forward his first and subsequent deposits by money order or registered mail direct to the postmaster at the banking point, for which receipts or certificates will be issued. He may withdraw all or any part of his postal savings by mail and on demand, together with any interest that may be due him.

The new leaflet points out that any person ten years old or over may open an account in his or her own name; that an account may be opened by a married woman free from any control or interference by her husband; that post office officials are forbidden to disclose to any person, except the depositor, the amount of any deposits; that withdrawals may be made without previous notice; and that the Government guarantees to repay all deposits on demand with accrued interest.

The leaflet will soon be printed in twenty-two foreign languages for distribution through local post offices. The foreign-born citizen has taken very kindly to postal savings, and literature in his own language will be of great assistance to him. In a recent article, Postmaster General Burleson commented on the foreign-born depositor as follows:

"Upwards of 500,000 depositors now have accounts in the Postal Savings System and they represent every nationality on the earth. They also represent almost every known occupation—professional men, theatrical people, mechanics, laborers, fishermen, pack peddlers, etc. But the majority are wage-earners, and of this class the foreign-born largely predominate. A census of depositors taken by the Post Office Department shows that approximately forty per cent (200,000) of the depositors are foreign-born citizens and they own more than fifty per cent of the deposits—splendid evidence of the confidence of our newly acquired citizens in the ability and good faith of their adopted country to fulfill its obligations.

"There is another reason which led immigrants, unfamiliar with our language and business methods, to turn to the Government to safeguard their humble savings and that reason is the disastrous experiences many of them have had by the failures of bogus 'private banks' officered by swindlers of their own tongue who have preyed mercilessly upon their loneliness and credulity."

Postal savings receipts have broken all records the past year. During the eight months prior to April 1st there was a net gain in deposits of $19,000,000, as against a gain of $8,000,000 for the same months the year before. Thousands of new accounts have been opened and the millions made up largely of hidden savings have been turned back into the channels of trade just at a time when there was pressing demand for every dollar.

Use Brick to Halt Mine Fire

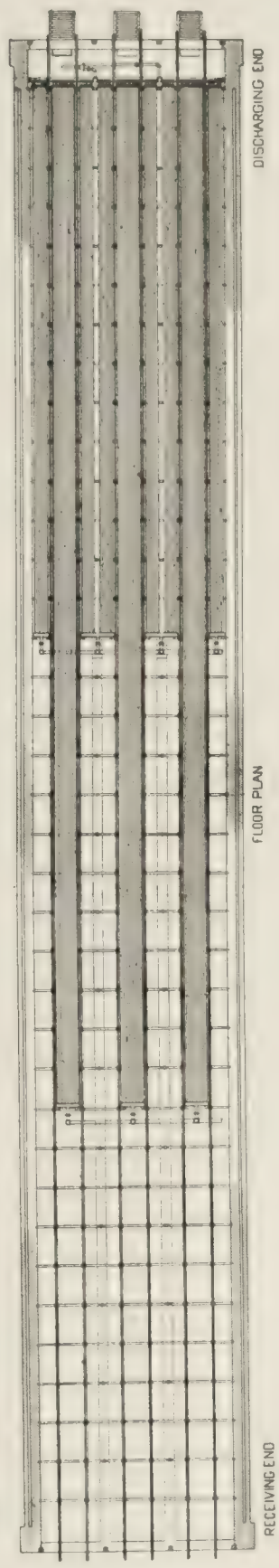
The use of brick at a fire resistant material was well demonstrated in a recent mine fire at Panama, Ill. A gas explosion in the mine of the Shoal Creek Coal Company at that point on Monday, April 5, resulted in the loss of a dozen lives and the starting of a fire which began to rage in the underground tunnels. In order to stop the fire, it was decided to build a brick wall in its path and to get the brick on the ground quickly, a special train was made up in Edwardsville, Ill., loaded with brick from the Richards Brick Company, and rushed to the scene of the fire. After this train, other cars loaded with brick followed on a regular run.

THE NATIONAL DRIER

derives its heat from live steam, night time, and exhaust steam in day time.

"It makes the weather"

The principle is the same always but— it is designed differently on every plant according to the drying qualities of your clay which we predetermine before constructing drier.



It will dry every kind of clay because it is constructed to fit each clay. It is elastic and will dry tender or tough clays, fast or slow. Why don't you investigate?

"It makes the weather"

The National Dry Kiln Co.

1118 E. Maryland St.

INDIANAPOLIS, - - INDIANA

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.
Scandinavia Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Scandinavia Belting Co.
Weller Mfg. Co.

Belt Dressing.
"Gripwell" Pulley Covering Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Blower Co.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Link-Belt Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Stevenson Co., The.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mc. Mfg. Co., H.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.
Stevenson Co., The.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Martin Brick Machine Mfg. Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co.
Trautwein Dryer & Eng. Co.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Chains (Steam Shovel).
Woodhouse Chain Works.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Clay Handling Machinery.
Clearfield Machine Shops.
Link-Belt Co.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
Chambers Bros. Co.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal and Ash Conveyors.
Link-Belt Co.

Colors.
Clinton Metallic Paint Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.
Smith Co., Claude.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Link-Belt Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.
Scandinavia Belting Co.

Cordage.
Broderick & Bascom Rope Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Machy. Mfg. Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.
Martin Brick Mach. Mfg. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Specialty Wire Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Martin Brick Mach. Mfg. Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
National Dry Kiln Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Stevenson Co., The.

Dynamos and Generators.
Westinghouse Elec. & Mfg. Co.

Efficiency Engineers.
Estes, Inc., L. V.

Electric Shovels.
Ball Engine Co. (Erie Shovels)
Link-Belt Co.
Marion Steam Shovel Co.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Taylor Instrument Companies.

Elevator Buckets.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Gandy Belting Co.
Link Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Deavitt, H. M.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Eq. Co.
Smith Co., Claude.
Trautwein Dryer & Eng. Co.

Engines (Gas).
Bruce-Macbeth Engine Co.

Engines and Boilers.
Arbuckle & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Schaffer Eng. & Eq. Co.

Fans.
American Blower Co.
Murray Iron Works Co.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.

Filter Presses.
Baird Machine & Mfg. Co.
Stevenson Co., The.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Toronto Fdry. & Machine Co.

Furnaces.
Trautwein Dryer & Eng. Co.
Smith Co., Claude.

Fuel Economizers.
Sturtevant Co., B. F.

Gasoline Shovels.
Thew Automatic Shovel Co.

Gears.
Baird Machine & Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schultz & Son, A. L.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Marion Machine, Fdry. & Sup. Co.
Martin Grate Co.
Murray Iron Wks. Co.
Smith Co., Claude.
Toronto Fdry. & Machine Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Hygrometers or Moisture Indicators.
Taylor Instrument Companies.

Inspection Tests—Consultation.
Deavitt, H. M.

Interlocking Block.
Smith, W. W.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Eq. Co., The
Smith Co., Claude.

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.
Smith Co., Claude.

Kiln Lugs and Bands.
Gerlock, H. W.
Smith Co., Claude.

Lime Mixer.
Gerlock, H. W.

Link Belting.
Link-Belt Co.

THE BUYERS' DIRECTORY—Continued

Locomotive Cranes.
Link-Belt Co.

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gas).
Baldwin Locomotive Works.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Metallic Paint.
Clinton Metallic Paint Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Mold Sanders.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
Westinghouse El. & Mfg. Co.

Oil Burners.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Test Instruments.
Taylor Instrument Companies.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poldometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.
Toronto Fdry. & Machine Co.

Power Plant Equipment (Complete).
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Taylor Instrument Companies.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.
Schultz & Son, A. L.
Stevenson Co., The.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulley Covering.
"Gripwell" Pulley Covering Co.

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Price Electric Co.
Stupakoff Laboratories.
Taylor Instrument Companies.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

Quartz Glass Articles.
Englehard, Chas.

Radiation Pyrometers.
Taylor Instrument Companies.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Frank, M. K.
Toronto Fdry. & Machine Co.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Manufacturers Equipment Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Price Electric Co.
Taylor Instrument Companies.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Martin Brick Mach. Mfg. Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Link-Belt Co
Schofield-Burkett Cons. Co.
Stevenson Co., The.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Shale Planer.
Arbuckle & Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Silo Front.
Zook, G. W.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.
Taylor Instrument Companies.

Steam Shovels.
Ball Engine Co. (Erie Steam Shovels)
Marion-Osgood Co.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Steel Ties.
Cincinnati Frog & Switch Co.

Sprocket Wheels.
Link-Belt Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Martin Brick M. Mfg. Co., H.
Stevenson Co., The.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Switches and Frogs.
Cincinnati Frog & Switch Co.
Buckeye Rolling Mill Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Foster Co., L. B.
Toronto Fdry. & Machine Co.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Taylor Instrument Companies.
Thwing Instrument Co.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Time Clocks.
Hardinge Bros., Inc.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Jackson & Church Co.
Chase Fdry. & Mfg. Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co., The.
Toronto Fdry. & Machine Co.

Unloading Devices for Pans.
Clearfield Machine Shops.
Toronto Fdry. & Machine Co.

Wagons.
Manufacturers Equipment Co.

Watchman's Clocks.
Hardinge Bros., Inc.

Wet Pans.
Jackson & Church Co.
Toronto Fdry. & Machine Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles.
Toronto Fdry. & Machine Co.

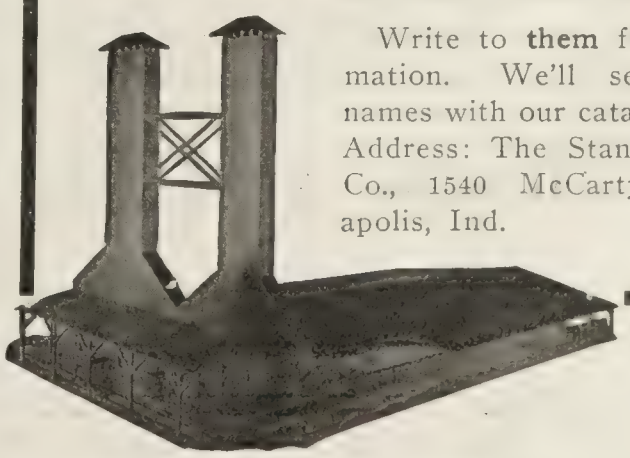
Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

A Drying System That Fits *Your* Needs

THAT'S what The Standard Drier is. The drying elements (heat, humidity and circulation of air) are so completely under control that it's a simple matter to adapt the drying conditions to precisely suit **your** clay.

Many other brickmakers whose clay is the same as yours have been using The Standard Drier for years with the most successful results. Write us about your clay and we'll refer you to plenty of others who were discouraged by the same problems until they installed The Standard Natural Draft Steam Drier.



Write to **them** for inside information. We'll send you their names with our catalog, on request. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

Go to Chicago With Your Ad Man

Attend with him the Big Convention of Associated Advertising Clubs of the World, June 20 to 24, 1915

You will assimilate more knowledge of modern methods of Advertising, Selling, Distribution, and Management during these five days than could be obtained in a lifetime of book study.

You will be brought in touch with the men who have done and are now doing the big things of business. You will participate in the biggest business meeting the world has ever known. You will listen to the expressed thoughts of distinguished Americans concerning present day and future business movements.

You will enjoy Chicago's wonderful park system, boat rides on Lake Michigan, modern hotels, theatres, and other amusements, including the big street pageant, and the Gridiron Show given at the Auditorium Theatre by 150 Chicago Advertising men.

Distinguished Speakers. President Wilson, State conditions permitting, will head the notable array of speakers. Hon. William Jennings Bryan, George Horace Lorimer, Arthur Brisbane, John H. Fahey and Henry Watterson are among the others who will be heard.

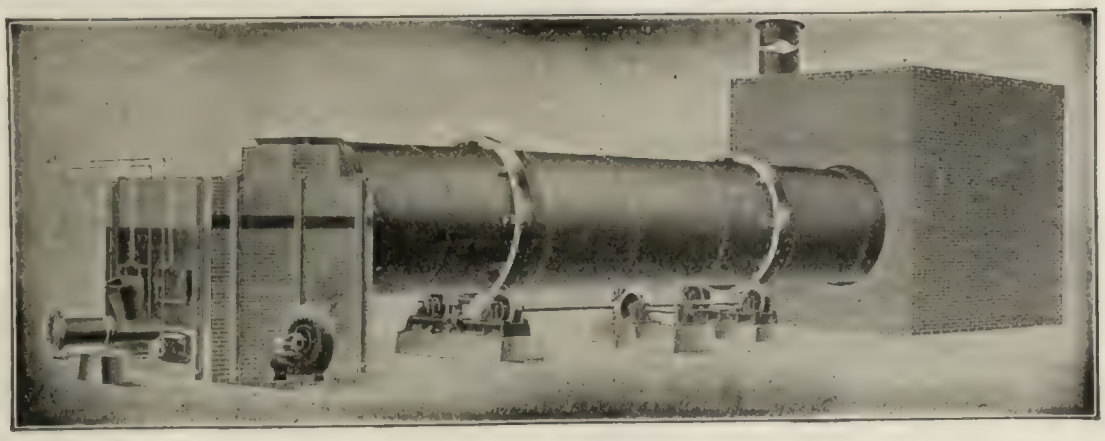
Advertisers in and publishers of trade and technical journals will hold special Departmental meetings to discuss their own problems and learn how they can co-operate to better advantage. Other departmental meetings will take up such subjects as catalogues, engraving, printing, mailing lists, sales plans and kindred subjects.

The ladies are wanted, too. Special entertainment—teas, luncheons, automobile trips, etc., is being arranged for them by Mrs. Chas. H. Porter and her committee.

Clear up your desk. Take a five days' vacation in a lake-cooled city. Mix with the business builders. You will return a better business man; a better physical man; and a better thinking man.

For further information, programme, rates, etc., address Convention Bureau, Advertising Building, Chicago, Ill.

Brick & Clay Record, **Chicago, Illinois**



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK



OSGOOD

"18" ¾-yd. Traction Revolving Shovel with independent steam steering engine, also combination hand steering operated from either side of shovel.

The Marion-Osgood Company

Marion, Ohio, U. S. A.

Eastern Office: 51 State Street, Albany, N Y.

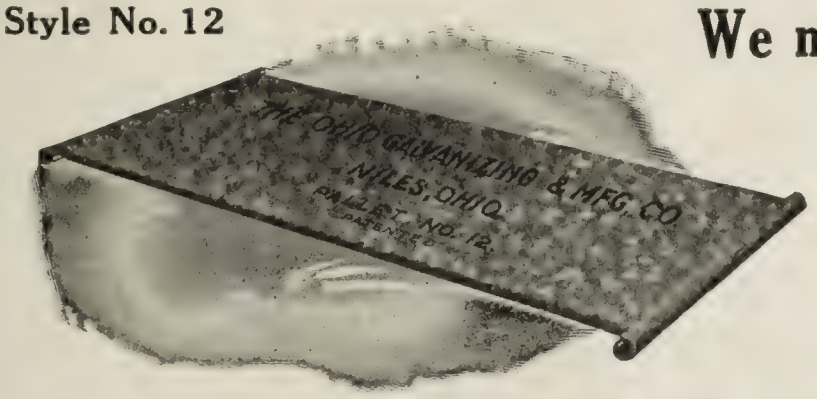
Chicago Agency: The M-C-B Co., McCormick Bldg. Phone Har. 6365.

New York Agency: M. E. Davis, 1682, 50 Church St.

Philadelphia Agency: J. M. Reed Co., Inc., 516 Commercial Trust Bldg.

STEAM SHOVELS DIPPER DREDGES

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

PAVING BRICK MANUFACTURERS

You will find the following circulars (reprints of articles appearing in "Brick and Clay Record") very helpful in fighting competitive materials.

The Truth about the Wayne County Roads (From October 7, 1913, issue)	100 500 1000	- -	$ 2.50 12.00 20.00
Chicago Concrete Streets a Failure (From March 7, 1914, issue)	100 500 1000	- - -	$ 2.00 5.00 8.50
Governor Glynn Urges Use of Brick Roads (From April 7, 1914, issue)	100 500 1000	- 	$ 4.00 15.00 20.00

BRICK AND CLAY RECORD, 445 Plymouth Court, Chicago

It is a Policy That Brings Results

The National Paving Brick Manufacturers' Association stands for the proper construction of Vitrified Brick Pavements. It responds fearlessly and courageously in the interest of the taxpayers by giving proper engineering advice upon any and all occasions affecting the interest of municipalities. These are the results that follow:

Economy in street improvements.
Satisfaction to the users and non-users of roadways.
A sanitary condition is afforded.
The nearest possible approach to a dustless town.
Even the housekeeper is favorably affected.
A street that is pleasant to the eye.

All these favors go to patrons of vitrified brick for street improvements upon one condition, namely—that they follow our "No. 1 Directions." They are easily understood and all the details are easily executed. What the manufacturers receive, leave it to us. We know that in the end all this means more brick.

National Paving Brick Manufacturers' Association

Will P. Blair, Secretary

Cleveland, - Ohio



Four color process plates made direct from brick panels for
KANSAS BUFF BRICK & MFG. CO., BUFFVILLE, KANSAS

Modern Selling is done through advertising—to get the picture that will sell the article advertised is a problem.

Illustrate the thing you have to sell in its natural colors and the chances for effective impression are in your favor.

BARNES-CROSBY COMPANY

E. W. HOUSER, President

Artists—Engravers—Catalog and Color Plate Makers

CHICAGO ST. LOUIS

Branch Offices in Principal Cities

A Classified Directory of Clay Product Manufacturers

Is your name in this list? If it is not you should write us about it at once. The cost is small—the result will be large.

ARCHITECTURAL TERRA COTTA

St. Louis Terra Cotta Co.	St. Louis	Mo.

BLOCK OR TILE (HOLLOW)

Hamilton Clay Mfg. Co.	Hamilton	Ill.
Davenport Brick & Tile Co.	Davenport	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (COMMON)

Tregillus Clay Pro., Ltd., Longhead Bldg.	Calgary, Alta.	Canada.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Alton Brick Co.	Alton	Ill.
Hamilton Clay Mfg. Co.	Hamilton	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co	Boone	Iowa.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Hodkinson, Wm.	Beaver City	Nebr.
Post, W. & J., Glen Head	Long Island	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Product Co.	Alliance	Ohio.
Belden Brick Co., The	Canton	Ohio.
Metropolitan Paving Brick Co.,	Canton	Ohio
Keller Brick Co., The	Cuyahoga Falls	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Wisconsin Brick Co.	Madison	Wis.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (ENAMEL)

Bonner and Marshall Brick Co.	Chicago	Ill.
American Enameled Brick & Tile Co.	New York	N. Y.
Macatee & Sons, W. L.	Houston	Tex.

BRICK(FACE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Tregillus Clay Pro. Co., Longhead Bldg.	Calgary, Alta.	Canada.
Hood Brick Co., B. Mifflin	Atlanta	Ga.
Tift Silica Brick & Stone Co.	Tifton	Ga.
Kimbell Brick Co., S. S.	Chicago	Ill.
Crawfordsville Shale Brick Co.	Crawfordsville	Ind.
Boone Brick, Tile & Paving Co.	Boone	Iowa.
Gethmann Brick Co.	Gladbrook	Iowa
Hydraulic-Press Brick Co.	St. Louis	Mo.
Progress Press Brick & Machine Co.	St. Louis	Mo.
Fiske & Company, Inc.	New York	N. Y.
Alliance Brick Co.	Alliance	Ohio.
Alliance Clay Products Co.	Alliance	Ohio.
Belden Brick Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio
Stark Brick Co.	Canton	Ohio.
Hocking Valley Products Co.	Columbus	Ohio.
Ironclay Brick Co., The	Columbus	Ohio.
Keller Brick Co., The	Cuyahoga Falls	Ohio.
McArthur Brick Co.	McArthur	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Bradford Pressed Brick Co.	Bradford	Pa.
Chestnut Ridge White Bk. Co.	Kunkletown	Pa.
Fallston Fire Clay Co., 1335 Oliver Bldg.	Pittsburg	Pa.
Watsontown Brick Co.	Watsontown	Pa.
D'Hanis Brick & Tile Co.	D'Hanis	Tex.
Macatee & Sons, W. L.	Houston	Tex.
Sheridan Press Brick & Tile Co., Inc.	Sheridan	Wyo.

BRICK (FIRE)

Pacific Sewer Pipe Co.	Los Angeles	Cal.
Alsey Brick & Tile Co.	Alsey	Ill.
Chicago Retort & Fire Brick Co.	Chicago	Ill.
Thomas Moulding Brick Co.	Chicago	Ill.
Mexico Brick & Fire Clay Co.	Mexico	Mo.
Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
St. Louis Vit. & Fire Brick Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.
Greenpoint Fire Brick Co., 111 Clay St.	Brooklyn	N. Y.
Fiske & Company, Inc.	New York	N. Y.
Maurer & Son, H.	New York	N. Y.
Belden Brick Co., The	Canton	Ohio.
Dover Fire Brick Co.	Cleveland	Ohio.
Davis Fire Brick Co.	Oak Hill	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.
Soisson Fire Brick Co., Jos.	Bolivar	Pa.
Brighton Fire Brick Co.	New Brighton	Pa
Reading Fire Brick Works	Reading	Pa.

BRICK (HOLLOW)

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Progress Press Brick Co.	St. Louis	Mo.

BRICK OR BLOCK (PAVING)

Albion Shale Brick Co.	Albion	Ill.
Alton Brick Co.	Alton	Ill.
Danville Brick Co.	Danville	Ill.
Purington Paving Brick Co.	Galesburg	Ill.
Murphysboro Paving Brick Co.	Murphysboro	Ill.
Barr Clay Co.	Streator	Ill.
Clinton Paving Brick Co.	Clinton	Ind.
Terre Haute Vit. Brick Co.	Terre Haute	Ind.
Progress Press Brick Co.	St. Louis	Mo.
Sterling Brick Co.	Olean	N. Y.
Alliance Clay Pro. Co.	Alliance	Ohio.
Big Four Clay Co.	Canton	Ohio.
Metropolitan Paving Brick Co.	Canton	Ohio.
Harris Brick Co.	Cincinnati	Ohio.
Cleveland Brick & Clay Co.	Cleveland	Ohio.
Deckman-Duty Brick Co.	Cleveland	Ohio.
Hocking Valley Brick Co.	Columbus	Ohio.
Dunn Wire-Cut-Lug Brick Co.	Conneaut	Ohio
United Brick Co.	Conneaut	Ohio.
Carlyle Paving Brick Co.	Portsmouth	Ohio.
Bessemer Limestone Co.	Youngstown	Ohio.
Gaither Brick Co.	Okmulgee	Okla.
Mayer Brick Co., C. P.	Bridgeport	Pa.
Hamburg Vitrified Brick Co.	Philadelphia	Pa.
Shawmut Paving Brick Co.	Shawmut	Pa.
Watsontown Brick Co.	Watsontown	Pa.
Macatee & Sons, W. L.	Houston	Tex.

BRICK (POTTERY)

Hood Brick Co., B. Mifflin	Atlanta	Ga.

CHIMNEY TOPS

Cannelton Sewer Pipe Co.	Cannelton	Ind.

CLAY (FIRE)

Laclede-Christy Clay Products Co.	St. Louis	Mo.
Mitchell Clay Mfg. Co.	St. Louis	Mo.
Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TERRA COTTA)

Raritan Ridge Clay Co.	Metuchen	N. J.

CLAY (TILE)

Raritan Ridge Clay Co.	Metuchen	N. J.

COAL GAS BENCHES

Laclede-Christy Clay Prod. Co.	St. Louis	Mo.
Didier-March Co.	Perth Amboy	N. J.

COLONIAL SWELLS

Post, W. & J., Glen Head	Long Island	N. Y.

DRAIN TILE

Kankakee Tile & Brick Co., The	Kankakee	Ill.
Harvey Brick & Tile Co.	Harvey	Iowa.
Postville Clay Products Co.	Postville	Iowa.
Columbus Clay Mfg. Co.	Black Lick	Ohio.
Evans Clay Mfg. Co.	Uhrichsville	Ohio.

Classified Directory of Clay Product Manufacturers—Cont.

FIREPROOFING
Kankakee Tile & Brick Co., The Kankakee ..... Ill.
Metropolitan Paving Brick Co., Canton ..... Ohio

FLOWER POTS
Hews & Co., A. H., Inc..... Cambridge ..... Mass.

FLUE LINING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

FURRING TILE
Kankakee Tile & Brick Co., The, Kankakee ..... Ill.

GLASS HOUSE REFRACTORIES
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

PROMENADE AND FLOOR TILE
Pittsburg Tile Mfg. Co..... East Liverpool ..... Ohio.

RAGGLE BLOCKS
Kimbell Brick Co., S. S..... Chicago ..... Ill.

REFRACTORIES
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
St. Louis Vit. & Fire Brick Co. St. Louis ..... Mo.
Davis Fire Brick Co..... Oak Hill ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.
Federal Clay Products Co..... Mineral City..... Ohio

ROOFING TILE
National Roofing Tile Co..... Lima ..... Ohio

SEWER BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

SEWER BRICK
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SEWER PIPE
Pacific Sewer Pipe Co..... Los Angeles ..... Cal.
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.
Laclede-Christy Clay Prod. Co.. St. Louis..... Mo.
Metropolitan Paving Brick Co., Canton ..... Ohio
East Ohio Sewer Pipe Co., The. Irondale ..... Ohio.
Evans Clay Mfg. Co..... Uhrichsville ..... Ohio.

SILO BLOCK
Davenport Brick & Tile Co..... Davenport ..... Iowa.

TERRA COTTA MANTELS
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TERRA COTTA MONUMENTS AND STATUARY
St. Louis Terra Cotta Co..... St. Louis..... Mo.

TILE (PARTITION)
Kankakee Tile & Brick Co..... Kankakee ..... Ill.

TILE (POTTERY)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.

TILE (PROMENADE)
Hood Brick Co., B. Mifflin..... Atlanta ..... Ga.
Pittsburg Tile Mfg. Co..... E. Liverpool ..... Ohio.

WALL COPING
Cannelton Sewer Pipe Co..... Cannelton ..... Ind.

WATER GAS LININGS
Laclede-Christy Clay Prod. Co. St. Louis..... Mo.

DEALERS
Hood Brick Co., B. Mifflin.. Atlanta ..... Ga.
Bonner & Marshall Brick Co.... Chicago ..... Ill.
Kimbell Brick Co., S. S..... Chicago ..... Ill.
Thomas Moulding Brick Co..... Chicago ..... Ill.
Fiske & Company, Inc..... New York..... N. Y.
Macatee & Sons, W. L. ..... Houston ..... Tex.
American Clay & Cement Corp. Rochester..... N. Y.

DEALERS (FACE BRICK)
Wisconsin Brick Co. ..... Madison ..... Wis.

DEALERS (HOLLOW TILE)
Wisconsin Brick Co. ..... Madison ..... Wis.

Index of the Display Clay Product Advertisers

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O. 3
Keller Brick Co., The, Cuyahoga Falls, O. 8

BRICK (COMMON)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 4
Keller Brick Co., The, Cuyahoga Falls, O. 8
Metropolitan Paving Brick Co., Canton, O. 5

BRICK (FACE)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
American Enameled Brick & Tile Co., New York, N. Y. 8
Ironclay Brick Co., Columbus, O. 7
Bradford Pressed Brick Co., Bradford, Pa. 7
Hocking Valley Pro. Co., Columbus, O. 7
Hydraulic Press Brick Co., St. Louis, Mo. 8
Belden Brick Co., Canton, O. 7
Keller Brick Co., The, Cuyahoga Falls, O. 8
Kimbell Brick Co., S. S., Chicago, Ill. 8
McArthur Brick Co., McArthur, O. 8
Stark Brick Co., Canton, O. 8

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill. 4
Brighton Fire Brick Co., New Brighton, Pa. 3
Chicago Retort & Fire Brick Co., Chicago, Ill. 3
Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, O. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3
Maurer & Son, H., New York City 3
Mexico Brick & Fire Clay Co., Mexico, Mo. 4
Jos. Soisson Fire Brick Co., Bolivar, Pa. 3
Southern Fire Brick & Clay Co., Chicago 4
St. Louis Vit. & Fire Brick Co., St. Louis, Mo. 4

BRICK OR BLOCK (PAVING)
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 4
Barr Clay Co., Streator, Ill. 4
Bessemer Limestone Co., Youngstown, O. 5
Big Four Clay Co., Canton, O. 6
Carlyle Paving Brick Co., Portsmouth, O. 6
Clinton Paving Brick Co., Clinton, Ind. 5
Danville Brick Co., Danville, Ill. 6
Deckman-Duty Brick Co., Cleveland, O. 5
Hamburg Vit. Brick Co., Philadelphia, Pa. 6
Harris Brick Co., Cincinnati, O. 5
Hocking Valley Brick Co., Columbus, O. 6
Mayer Brick Co., C. P., Bridgeport, Pa. 4
Metropolitan Paving Brick Co., Canton, O. 5
Murphysboro Paving Brick Co., Murphysboro, Ill. 4
Purington Paving Brick Co., Galesburg, Ill. 6
Shawmut Paving Brick Co., Shawmut, Pa. 6
Sterling Brick Co., Olean, N. Y. 4
Terre Haute Vit. Brick Co., Terre Haute, Ind. 5
United Brick Co., Conneaut, O. 5

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa. 4

DEALERS
American Clay & Cement Corp., Rochester, N. Y. 6
Bonner & Marshall Brick Co., Chicago, Ill. 7
Kimbell Brick Co., S. S., Chicago, Ill. 8
Globe Brick Co., East Liverpool, O. 8

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O. 6

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill. 8

REFRACTORIES
Brighton Fire Brick Co., New Brighton, Pa. 4
Davis Fire Brick Co., Oak Hill, O. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3

SALT GLAZED BRICK
Stark Brick Co., Canton, O. 8

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (ROOFING)
National Roofing Tile Co., Lima, O. 7

Fire Brick

NO better fire brick for Kilns, Boiler Settings and Gas Producers than the "Brighton" and "Brighton S" brands of the

Brighton Fire Brick Co.
New Brighton, Pennsylvania

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.**
Sales Office, **Bolivar, Pa.**

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.
Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX
FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.
208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. **Cleveland, Ohio**

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

***For* Side Walls**
***For* Crowns**
***For* Fire Arches**
***For* Perforated Bottoms**

Consult us when in market.
We are ready to serve you.

DAVIS FIRE BRICK CO.
OAK HILL, OHIO

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

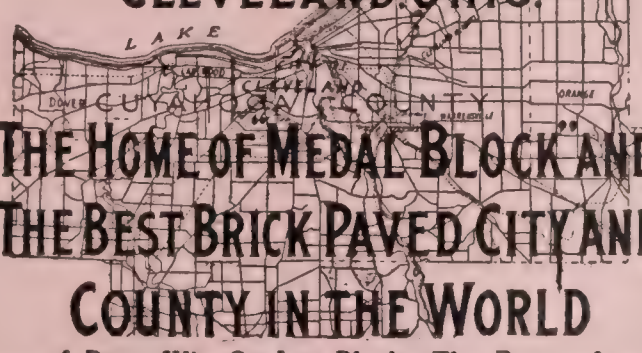
Ironstone Block

"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

THE DECKMAN-DUTY BRICK CO

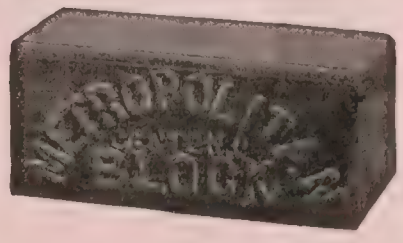
CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O. *General Office* Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

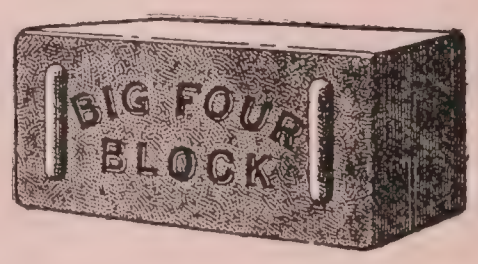
Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.

City National Bank Bldg. Canton, Ohio

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

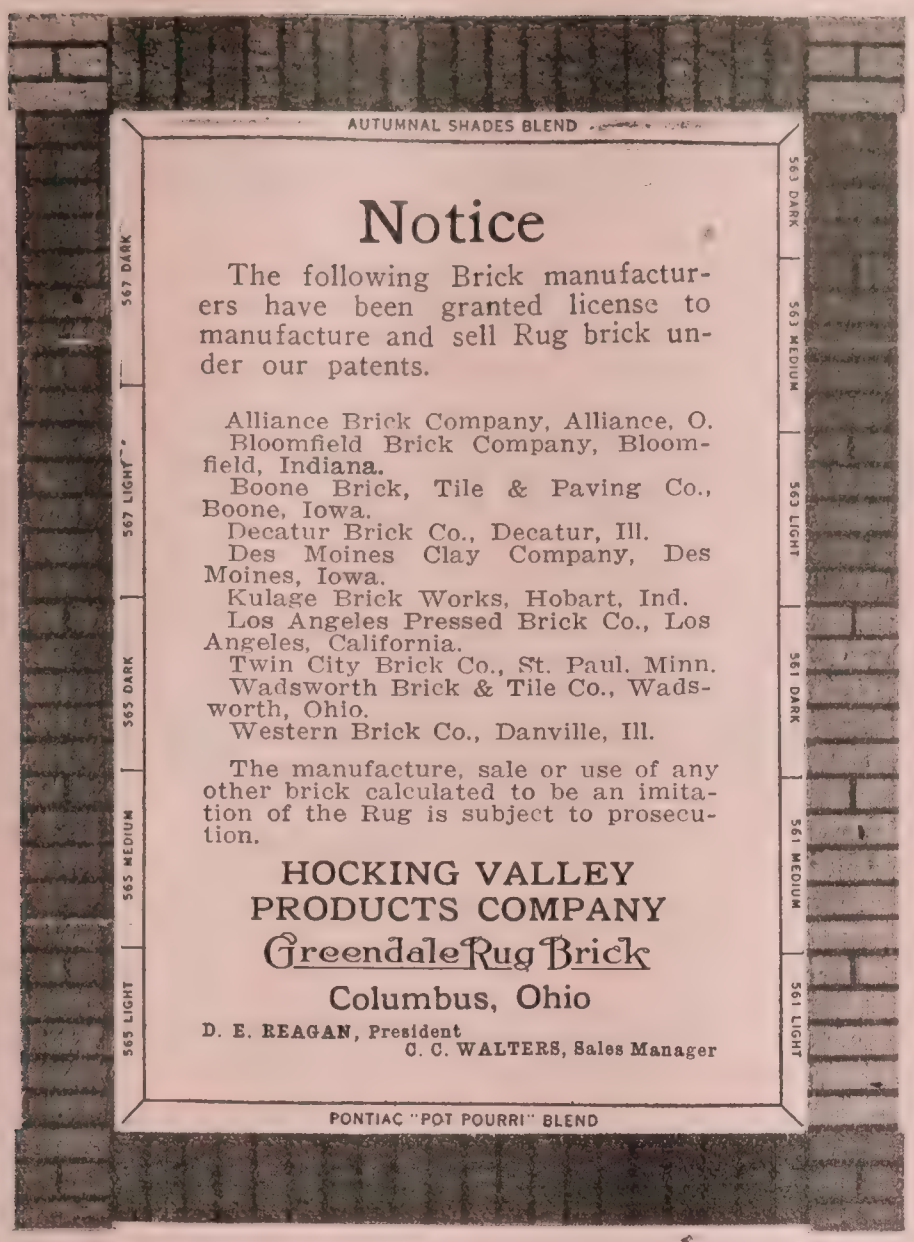
GALESBURG, ILL.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials



Notice

The following Brick manufacturers have been granted license to manufacture and sell Rug brick under our patents.

Alliance Brick Company, Alliance, O.
Bloomfield Brick Company, Bloomfield, Indiana.
Boone Brick, Tile & Paving Co., Boone, Iowa.
Decatur Brick Co., Decatur, Ill.
Des Moines Clay Company, Des Moines, Iowa.
Kulage Brick Works, Hobart, Ind.
Los Angeles Pressed Brick Co., Los Angeles, California.
Twin City Brick Co., St. Paul, Minn.
Wadsworth Brick & Tile Co., Wadsworth, Ohio.
Western Brick Co., Danville, Ill.

The manufacture, sale or use of any other brick calculated to be an imitation of the Rug is subject to prosecution.

HOCKING VALLEY PRODUCTS COMPANY
Greendale Rug Brick
Columbus, Ohio
D. E. REAGAN, President
C. C. WALTERS, Sales Manager

The Ironclay
TRADE MARK
FIRE-FLASHED BRICK
VITREOUS
SELF-CLEANING
It washes its own face.

The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

TRADE MARK
Belden Brick
CANTON, OHIO

The Best Face Brick Made
Five Factories—All Colors

The Belden Brick Co.
Canton, Ohio

THE NATIONAL ROOFING TILE CO.
LIMA, OHIO
Manufacturers of the Patent Double
Inter-Locking Roofing Tile
In Two Patterns
Made in Natural Red and Green Glazes

Send Plans for Estimates
Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.
MFRS. OF FLOOR TILE
DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bradford Pressed Brick Company
Bradford, Pennsylvania

Sole makers of the famous "BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.
Write for "RED" Catalog.

Bonner & Marshall Brick Company
1205-6 Chamber of Commerce Building
Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

ALLIANCE RUG BRICK

Excel all other brick as to texture and beauty of coloring. The chromatic scale of colors runs through the beautiful Rug-texture faces of these brick, most of the brick showing **three** or **four** or **more** of the seven primary colors. One of the most popular sellers in America today.

Mr. Agent, this brick will get you business. Write for samples.

The Alliance Brick Co., Alliance, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.

CANTON, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

L. D. BINYON, President — H. L. MATZ, Vice-President — JAS. A. HOGAN, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory, South River, N. J. — General Office, 1182 Broadway, N. Y.

THE CHASE DRYER CARS

With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*

The Chase Fdry. & Mfg. Company

Columbus, Ohio



Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

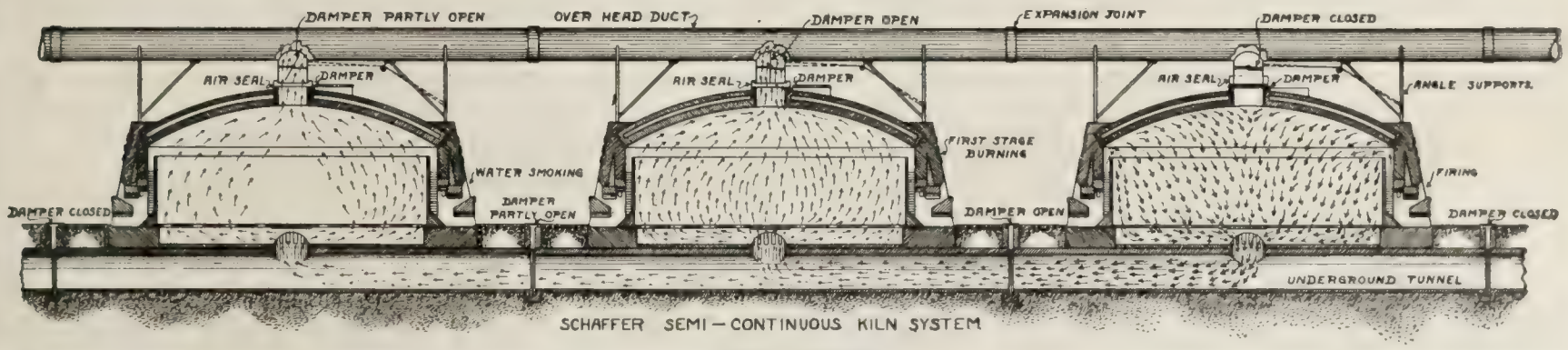
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



SCHAFFER SEMI—CONTINUOUS KILN SYSTEM

Patent Allowed

Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations $5.00 Post Free

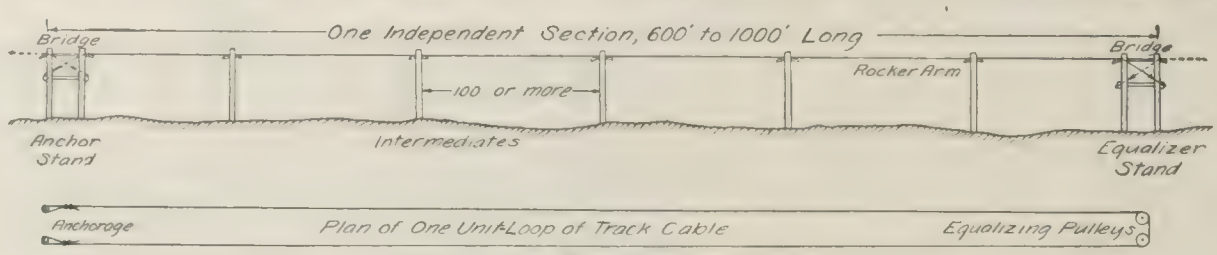
THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

"BRICK AND CLAY RECORD"

445 Plymouth Court, Chicago

FAST CONSTRUCTION BY SECTIONS

The LAWSON TRAMWAY being normally built in short independent loop sections lends itself very easily to rapid construction in the field. The diagram illustrates the general idea.



One Loop Section or Unit

Each loop is of convenient length determined by conditions and may range from 600 to 1,000 ft. The loops terminate in equalizer stands and anchor stands alternately placed.

In organizing to construct a tramway of say several miles in length the real unit of construction is not the whole tramway, but merely **one loop section.** As an extreme case therefore when plenty of help is available, the whole tramway can be built in the time that it takes to build **one loop,** simply by assigning a crew of three to five men to a single section,—all under charge of a general foreman. Each crew therefore will have to build only one stand and from five to nine intermediate supports; and string and strain the cables thereon. Where the ground is open and with easy digging a week will usually suffice to build 1,000 ft. The same operation being carried on simultaneously on all other sections,—a separate crew in the meantime framing up and setting the two terminals,—it follows that when sufficient help can be commanded a complete tramway of any practical length can be built in the time it takes to build one of its loop sections.

Of course things do not always work out as smoothly as this for rapid construction nor is it always economical or indeed necessary. The point is, however, that in emergency work the time of construction can be enormously shortened over that required for any other tramway which must necessarily be built as a whole.

Respectfully yours,

AMBURSEN CO., Tramway Department, 61 Broadway, New York

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick

BELDEN BRICK CO.,-CANTON

THESE SIGNS ARE SHEET STEEL

with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

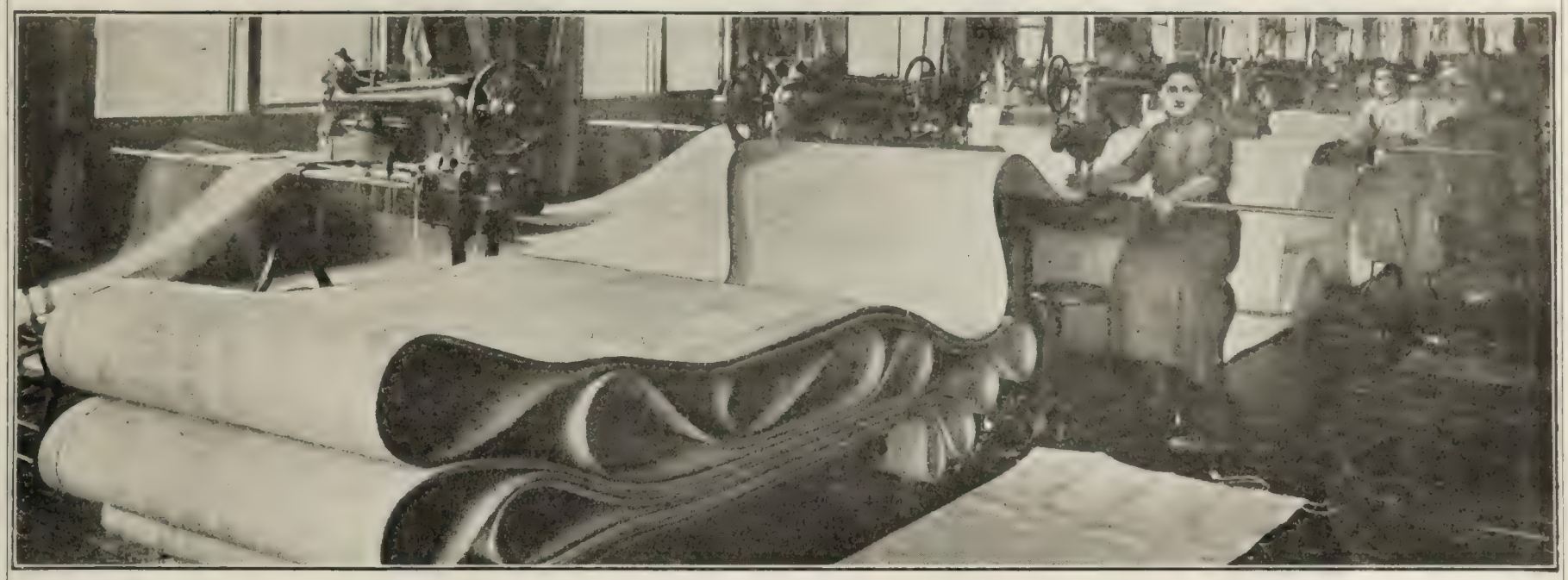
WE SELL THESE SIGNS

at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

Send your orders to

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.

Five Men will Load Sixty Thousand Brick per Day

and do it easy. They can increase this to seventy-five thousand when necessary to get out rush orders.

Some of the letters we have on file from users of the Mathews Gravity Brick Conveyer give some startling figures. Several manufacturers claim that their men have handled brick on the conveyer at the rate of five thousand per hour.



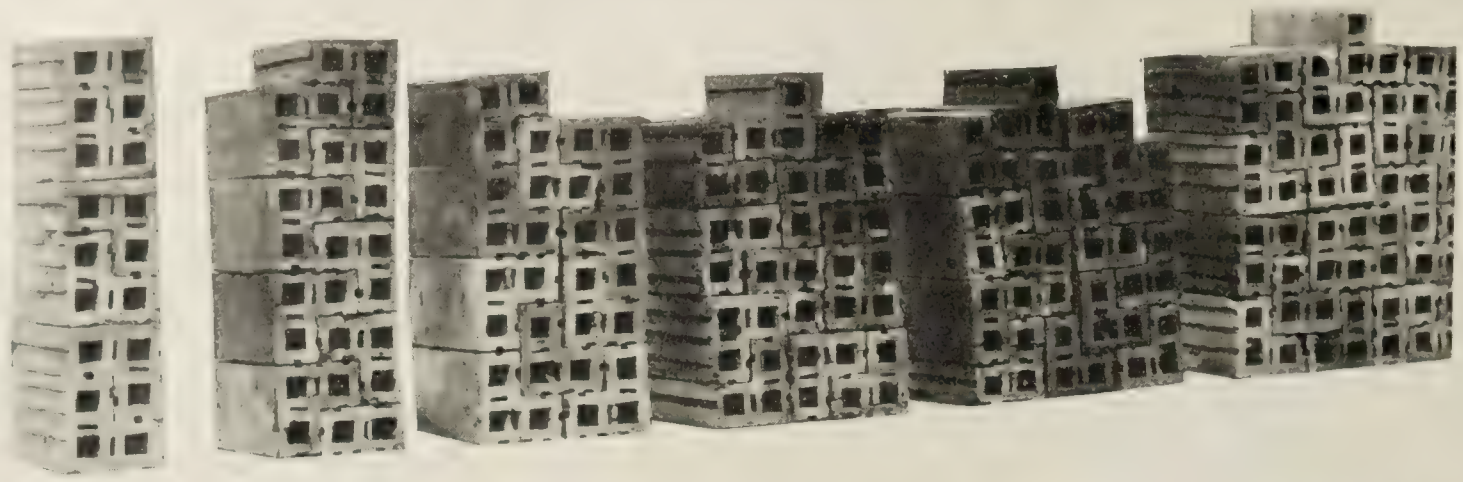


If you make the mistake of considering what a Gravity Conveyer System will cost without regard for what it will save in salaries, you cannot accurately estimate its value as an investment. We can point out many other advantages, upon request.

SPEED — MATHEWS GRAVITY — The MATHEWS WAY — CARRIER COMPANY — The SAVING WAY — ECONOMY

No Power Required

to run this conveyer. Just the weight of the brick resting on the steel, ball-bearing rollers causes them to run down a straight line of conveyer or turn right-angle corners without injury or danger of falling off.



"Samson Interlocking Tile"

Patented U. S. March 10th, 1910. No. 1,089,507

The 20th Century Building Material

The illustrations only show a few of the many merits of "Samson Tile" which build any desired thickness of wall, and produce *smooth, scored or rough* face.

There is going to be a big demand for a rough Face Texture Tile, for Resident, Factory and all building where tile may be used. *No other* tile possesses the merits of "Samson Tile" for this construction, with its narrow mortar beds and horizontal dead air spaces which the tile form when laid.

A great number of the live wires of the clayworking industry are contracting for territory for the manufacturing and sale of "Samson Tile." Write today or you may be too late. License granted only to responsible firms.

W. W. Smith, Shallow Lake, Ont., Can.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 20^ sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia



Why the New Westinghouse Type CS Is the Best Motor for Brick and Clay Working Plants

FORGED STEEL CONSTRUCTION—Frame and feet are of heavy forged open-hearth steel, thus providing great mechanical strength.

LARGE SHAFT—The shaft is unusually large in diameter. It is made of axle steel, which is 25 per cent stronger than the machinery steel generally used for motor shafts.

RUGGED ROTOR—There is nothing about the rotor that can burn out, work loose, or deteriorate under the heat developed in service.

WINDINGS—Moisture-resisting. Can be supplied waterproof if required.

DUSTPROOF BEARINGS—Ample in size; interchangeable. Motors shipped from stock with dustproof bearings.

NO VENTILATING DUCTS—Low operating temperatures are obtained without ventilating ducts. No danger of burn-outs because of clogged passages.

LARGE AIRGAPS—Larger than those of any other motors on the market. No airgap adjusting devices needed or used.

EASILY REPAIRED—The bearings are the only wearing parts and their natural life is several years. When worn out it is cheaper to renew them than rebabbit them, although this can be easily done if desired. Renewals of all other parts can be easily made in case of accidental damage.

COMPLETE LINE—These motors are made in all commercial sizes and speeds for all commercial polyphase circuits and for all constant speed services, belted, geared or direct connected. Send for full information.

Westinghouse Electric & Mfg. Co.

Sales Offices in all Large American Cities — East Pittsburgh, Pa.

In the Long Run, What?



Special Marion Revolving Shovel in a Virginia Brick Plant.



⅝-yard Revolving Marion in an Illinois Brick Plant.



Marion Standard Railroad Type in Deep Cutting.

It is a simple matter for a steam shovel to fill clay cars—but does this always mean filling the brickmaker's pocket with profit? It is relatively easy for a steam shovel to handle clay for a year or two—but how does it perform after it has seen five or ten years of service? Should first cost be the only consideration? Isn't "last" cost important, too?

There are scores and scores of ten, fifteen, twenty and twenty-five-year-old

Marion Shovels

working today, apparently without thought of their age. Records will show that using a Marion pays the brickmaker; statistics will prove that a Marion saves—but the Marions now in use (over 3,000 of them), tell the story of STEADY, RELIABLE SERVICE. Isn't that worth thinking about?

There is a Marion Shovel (steam or electric) for every clay handling requirement—whether it be in softest clay or in hardest shale. Catalogue 92 tells about them and shows how they are used by the brickmaker. Write for your copy TODAY.

THE MARION STEAM SHOVEL CO.

Manufacturers of Excavating Machinery of Every Description

Station A, Marion, O.

ATLANTA CHICAGO NEW YORK SAN FRANCISCO SEATTLE

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

WANTED—One brickyard engineer who understands the repairing of dry presses. Two brick burners who understand burning face brick with oil. One Marion steam-shovel man, who understands the working of a clay pit. One young man who understands stiff-mud machinery. Address: 5-BA, care of "Brick and Clay Record." 5-2-2.

WANTED—A man who thoroughly understands the promotion and installation of sub-irrigation projects. To such a man a first-class proposition is open. Salary and commission. Address: The International Brick Co., El Paso, Texas. 5-2-2.

SPECIAL OPENING.

WANTED—Party with some money to help experienced brickyard man promote an $80,000 to $90,000 brick plant. Twenty-five acres of the best Ohio red burning shale, 30 ft. thick; 10 ft. of plastic fire clay under the above. Down-draft kilns, 725,000 capacity; three presses for press brick and 100,000 capacity stiff-mud machinery installed this spring. Latest improved waste heat dryer 42,000 capacity. For particulars address: 5-S, care of "Brick and Clay Record." 5-2-P.

WANTED—POSITIONS.

WANTED—Position on paving brick plant as assistant superintendent or similar position. Want this position where there is a chance to arrive. If you appreciate interest, ability and dependability, I want to get in touch with you. Am a ceramic engineer with two full years at the bottom in face and paving brick. Will furnish references from superintendents that you know. Address: 5-R, care of "Brick and Clay Record." 5-2P.

WANTED—Position as superintendent, 20 years' experience in the manufacture of common brick, face brick, paving block, roofing tiles and hollow ware. Several years with German and American kiln builders, designing, building and operating continuous kilns and dryers. Expert burner, best references. Address: 5-BB, care of "Brick and Clay Record." 5-2-3P.

POSITION WANTED—As superintendent of stiff-mud, paving or face brick plant. Have had 20 years' experience, 35 years of age. Can burn with oil, coal or gas. Have made brick a careful study. Can furnish best references. W. H. Blagg, 224 Whalen, Cherryvale, Kan. 5-2-1P.

WANTED—Position as superintendent of plant manufacturing fireproofing, heavy building block or sewer pipe. Have had 20 years' experience, now employed and giving good satisfaction to employer. Address: 5-BJ, care of "Brick and Clay Record." 5-2-1P.

WANTED—Position as superintendent of brick plant, face brick preferred. Thoroughly familiar with gas-fired continuous and down-draft kilns. Best of references. Employed, but desire change. Address: 5-BF, care of "Brick and Clay Record." 5-2-1P.

POSITION WANTED—Superintendent or master mechanic, experienced in all grades of brick, also building and drain tile. Can balance dies to prevent checking in drying. Address: 5-BE, care of "Brick and Clay Record." 5-2-1.

WANTED—Position as superintendent of brick plant. Experienced in fireclay silica, building and paving brick. Employed, but desire change. Best references. Address: 5-A, care of "Brick and Clay Record." 5-1-P.

WANTED—Position as superintendent by thoroughly reliable man, and competent in every respect. Address: 5-BD, care of "Brick and Clay Record." 5-2-1.

EQUIPMENT WANTED.

WANTED—Second-hand clay gatherer and plow. Must be in good condition. Grant Tile Mfg. Co., Grant, Mich. 5-2-1P.

CLAY WANTED

WANTED—Clay that burns red, suitable for manufacturing flower pots. Must be within easy shipping distance of Chicago. Address. Geo. Keller & Son, 2618 Herndon St., Chicago, Ill. 4-1

FOR SALE—CLAYWORKING PLANTS.

FOR SALE—Whole or half interest in one of the best paying brick and tile plants in Washington. This is a new plant, Fate machinery. The farmers have just commenced to use burned clay tile—thousands of acres to be tiled; fine climate. Four-inch tile sold at yard, $25.00. Write and learn more. Address: Star Brick & Tile Plant, Bay View, Wash. 4-2-4

SHERIFF'S SALE—June 12, 1915—25,000 daily capacity brick plant, fully equipped, 20 acres clay, producing high-grade face brick and pavers, 4 acres fine moulding sand, 12 ft. thick, opened for operation; splendid shipping facilities. Located at Crooksville, Ohio, one of the best clay manufacturing towns in the country. Full particulars write Tom O. Crossan, Attorney, New Lexington, Ohio. 5-2-2.

FOR SALE OR LEASE—The best situated brick manufacturing plant in southeastern Kansas: machinery and plant in first-class condition, could be put in operation in 48 hours. Capacity, 60M. On Santa Fe Railroad. Highest quality of shale, natural gas at plant. It you mean business address: Secretary, Kansas Vitrified Brick Co., Chanute, Kansas. 5-2.

FOR SALE—One 2-kiln tile plant in Darke County, Ohio. Everything new and modernly equipped. Excellent market and very best clay. To be sold at public auction on premises, June 24th, 1915. For further particulars address: Guy C. Baker, Greenville, Ohio. 5-2-1P.

FOR SALE—A favorably located brick plant and coal mine in eastern Ohio; excellent shale and fine coal. Capacity 25,000 brick per day. On leading railroad system and near market. Address: 5-BN, care of "Brick and Clay Record." 5-2-4P.

FOR SALE—A going brickyard, 9 miles from Savannah. A business with wonderful possibilities to men who know how. Cheap freights, good equipment, a bargain. Georgia Real Estate Co., Savannah, Ga. 5-2-1.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Complete mud brick plant, whole or in part, good engine, boiler, clay machinery, 30,000 pallets, etc. Very cheap if sold soon. Ilias Walter, Upper Sandusky, O. 5-3P.

FOR SALE—Brick and tile factory; 10 acres of land, brick building, Fate machinery. Bente and Wilson, Sedalia, Mo. 5-2-P.

BARGAINS! BARGAINS!—Brickyards and cement plants. Any size, anywhere. Our list and services free to buyers. Western Sales Agency, Minneapolis, Minn. 5-2-1P.

FOR SALE—Brick plant, good clay. Soft-mud plant. Good demand for shipping brick. Wm. Hodkinson, Beaver City, Neb. 5-2-1

FOR LEASE—FIRE CLAY LAND.

FOR LEASE—Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay. Mines shipping on Pennsylvania Railroad, New York Central Railroad two miles distant. For further particulars, address: John Quinn, Houtzdale, Pa. 5-2-1.

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE

One 12x12 slide valve engine with 84 in. flywheel, also 72x18 band wheel. This engine has been completely overhauled and rebabbitted throughout; new governor and throttle valve, and is in first-class condition. One double mold Bonnot repress, practically new, run less than three months. One Chambers cutter for end-cut brick; in good condition, run less than one year. One Rumely traction engine, single cylinder, boiler insured under the Fidelity and Casualty Co., and allowed 110 lbs. working pressure and pronounced in good condition by their inspector. One steel boiler stack, 65 ft. high by 42 in. diameter, 10 gauge sheet steel. Stack was used about one year, and taken down account putting in new boilers and it was not large enough for them. Address: Hydraulic-Press Brick Co., Chamber of Commerce Bldg., Chicago, Ill. 5-2-2.

FOR SALE—All kinds of Clayworking Machinery, bargains in used engines, boilers, motors, brick and tile machines, dry pans, pug mills, cutting tables, anything you want. Two good fully equipped plants for sale. CLAYWORKERS EXCHANGE, Farmers Bank Bldg., Springfield, Ill. 5-tf.

FOR SALE

Martin Pipe Rack Dryer, steel pallets, cable conveyor, etc., all complete, 32,000 capacity, used only short time before failure of company. Style O Thew steam shovel, 8 ft. wet pan, 9 ft. Stevenson dry pan, stiff-mud brick and tile machine, with dies, Martin soft-mud machine with sander. Three all-steel dump cars, Blake 15 in. by 9 in. jaw crusher, Berg 4-mold dry press. One Williams crusher. Will be sold separately. C. H. Horton Co., Painesville, Ohio. 5-2-2.

FOR SALE—One Andrus 4-mold dry press machine that has made only 400,000 brick—practically new. $1,200.00 on car, Memphis. One 5-mold (can be changed to six) Hercules soft-mud machine. One 6-mold Hercules soft-mud machine. Overhauled and in good condition. $250 each on cars, Memphis. One No. 0 late model Thew steam shovel that has been worked about six months and in good condition; $2,300.00 on cars, Memphis. Address: South Memphis Brick Co., Memphis, Tenn. 3-2-TF.

FOR SALE—Practically new: One 40 h.p. and one 60 h.p. high pressure boiler, one 40 h.p. slide valve engine, 9 ft. American dry pan and clay elevator. No. 88 Brewer brick and tile machine, Fayet's end-cut cutting table, pulleys, shaft and boxing, Pulsometer steam pump No. 3, 8 ton of 16-lb. rails, 12,000 ft. double strength steam pipe. Address: W. E. Lyon & Co., Carthage, Ill. 5-2-TF.

FOR SALE—One Bensing automatic side-cut brick table complete with off-bearing table. Used for cutting but one kiln of brick. A bargain. One New Era gas engine, 40 h.p., good as new. One 10 A Brewer mill, good as new. One Brewer 10 ft. pugmill in first-class condition. Milroy Drain Tile Co., Milroy, Ind. 5-2-1.

FOR SALE—Second-hand multigraph machine in first-class condition. Will make special time inducements. Address: 5-BP, care of "Brick and Clay Record." 5-2-1.

Brick and Clay Record Classified Ads Are Result Producers

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and iron-working machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Engine, boiler, tile machine and all fixtures belonging to mill. Cement block machine. Wm. Marquis, Milford, Ill. 5-2-1P.

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Vogan, Franklin, Pa. 4-TF

BUILDING AND REPAIRING KILNS

FOR SALE—A special lot of hand-made and hand-pressed 9 inch and 13½ inch Key fire brick made from weathered (Carter County, Ky.) flint clays. Ideal brick for building new kilns, bag walls and making repairs. Must move to make room for improvements and will sell cheap. Ashland Fire Brick Co., Ashland, Ky. 5-2.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.

M. K. Frank, Pittsburgh, Pa.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

Out of a job? Want a foreman?
Want to buy new equipment?
Want to sell your machinery?

ADVERTISE IN

"Brick and Clay Record"

For Results It Has No Equal

PRICES FOR WANT AND FOR SALE ADS

Remittance must accompany the order.
No extra charge for copy of paper containing advertisement

8 cents per word first insertion.
6 cents per word additional insertion.
Minimum charge—$1.00 per insertion.

BOOKS YOU SHOULD HAVE

Seger's Collected Works.....$3.50
Modern Brickmaking.....$5.00
Clayworker's Handbook.....$2.00
How to Analyze Clay.....$1.00

"TACK A SIGN" ON YOUR LETTERS AND ENVELOPES

Build with Brick
Size A.....20c postpaid

Imprint the "Build with Brick" Slogan on Your Office Stationery. Don't Wait Until You Are Ready to Order a Fresh Supply—Overprint the Old.

Build with Brick
Size B.....25c postpaid

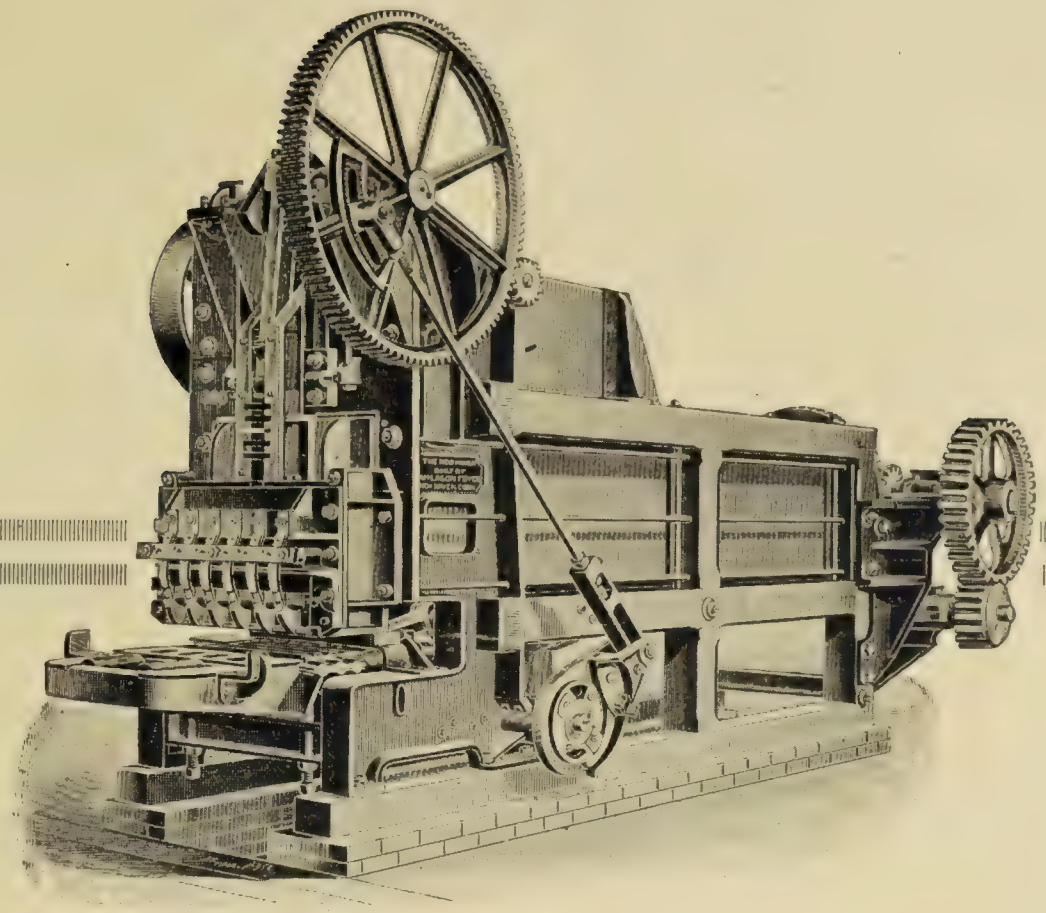
Tell Your Printer to Use "Metallic Blue" Ink. He Will Get It For You If It Is Not Already in Stock.

Build with Brick
Size C.....30c postpaid

"Brick and Clay Record" will Supply the Electrotypes at Insignificant Cost—see Prices Quoted in this Advertisement.

Build with Brick
Size D.....35c postpaid

Address "Book Department" "Brick and Clay Record," 445 Plymouth Court, Chicago.



Assets and Liabilities

Every piece of machinery is an asset and a liability.

A high (or low) first cost does not make it a greater or less asset.

The interest, merely, on that first cost, is a liability. So is the repair cost. So is the cost of power to run the machine.

Estimated depreciation, or a sinking fund, calculated upon the life of the machine is a greater, or less liability, in proportion to the known life of the machine.

Efficiency—the amount of product and quality of product—determines the amount of the asset.

Not what the machine *costs*—what it *does*.

In making brick machinery we did not attempt to make a low-priced machine.

We figured on making brick machines with the highest asset making qualities and the lowest liability making points.

We realized that more brickmakers wanted *results*—that is, *profits*—than wanted low-first-cost and high-upkeep machines.

The interest on the difference in cost is nominal, when compared to other liability items.

Not that our machines are too costly. They are built to work, built to wear, built to *run*, day after day, without a breakdown.

Have these points in mind when you look at brick machinery.

New Haven Soft Mud Brick Machines

Turn Out More Brick, More Perfect Brick, Last Longer, Have Fewer Repairs, Use Less Power and Have Fewer Break Downs Than Any Other Soft Mud Brick Machine Made

The Eastern Machinery Company

New Haven, Conn.



Gasoline Locomotive for Bach Brick Co.

Baldwin Gasoline Locomotives

are specially suitable for light switching service in and about brick-yards. They consume no fuel while standing, and are easily handled by one operator. A Baldwin gasoline locomotive has made a record of one year's service with a cost for repairs of less than $5.00.

A copy of Record No. 74, which contains further particulars, will be furnished on request.

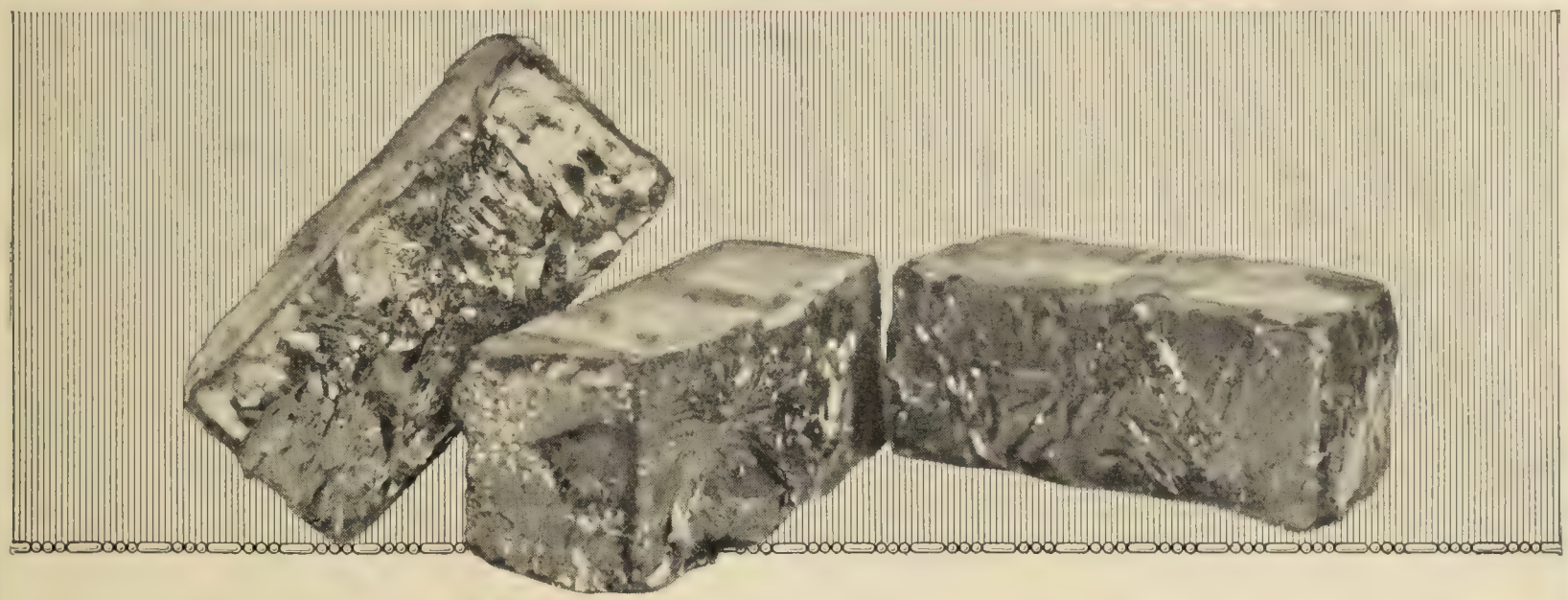
The Baldwin Locomotive Works

Philadelphia, Pa., U. S. A.

Represented by

F. W. Weston, 50 Church Street, New York, N. Y.
Charles Riddell, 625 Railway Exchange, Chicago, Ill.
C. H. Peterson, 1610 Wright Building, St. Louis, Mo.
George F. Jones, 407 Travelers Building, Richmond, Va.
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.
Williams, Dimond & Co., 310 Sansome Street, San Francisco, Cal.

BRICK and CLAY RECORD



Barrett's PAVING PITCH

When the block is worn out the Pitch still clings—

WHENEVER an old pitch-filled, block pavement is torn up, the pitch filler will be found clinging to the blocks when they are piled up on the sidewalk.

You can hardly knock it off; in fact, the only way to make the pitch let go is to subject it to such heat that it will melt and flow away.

No matter whether the pitch has been in the pavement five years or thirty years this condition will still be the same. Moreover, after twenty or thirty years the pitch is still chemically and physically good.

If new paving pitch were not so cheap the old pitch in a twenty-year-old pavement could be melted and scraped from the old block and used over again in a new pavement and put to work for twenty years more. Good pitch, such as Barrett's Paving Pitch, is absolutely inert to the action of rain and frost and weather. The tendency of pitch to cling firmly to the block is responsible for the fact that Barrett's Paving Pitch maintains a perfect, waterproof seal throughout the pavement, protecting the foundation from water and frost.

No matter how the block may contract or expand in varying temperatures, the pitch adapts itself to the varying width of the joint and never lets go of the block.

Every joint is an expansion joint with Paving Pitch and no special expansion joints are needed, consequently a pitch-filled pavement cannot crack or swell up or explode. It will not thrust manholes or curbing out of position in hot weather. It is free from the stresses which characterize a cement-filled pavement at every turn of the street and every intersection.

Booklets free on request. Address our nearest office.

BARRETT MANUFACTURING COMPANY

TRADE B MARK

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati
Pittsburgh Detroit Birmingham Kansas City Minneapolis Salt Lake City Seattle
THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver St. John, N. B. Halifax, N. S. Sydney, N. S.

Vol. XLVI, No. 11 Chicago June 1, 1915

It makes no difference

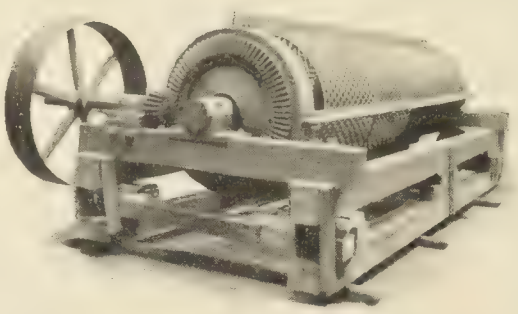
whether you want to screen your material, elevate, store or convey it or transmit power to various units

When you want any such equipment, there is just one place to send your orders and more Brick and Clay Workers are finding this out every day.

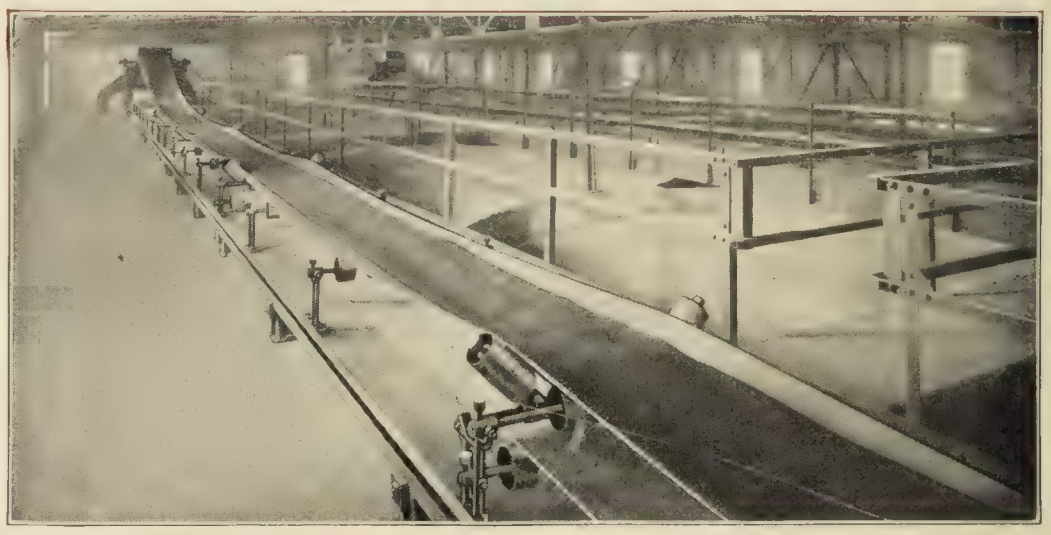
You may fool them once but when they keep sending repeat orders it proves that you are treating them right.

SPECIFY WELL ER-MADE INSIST ON

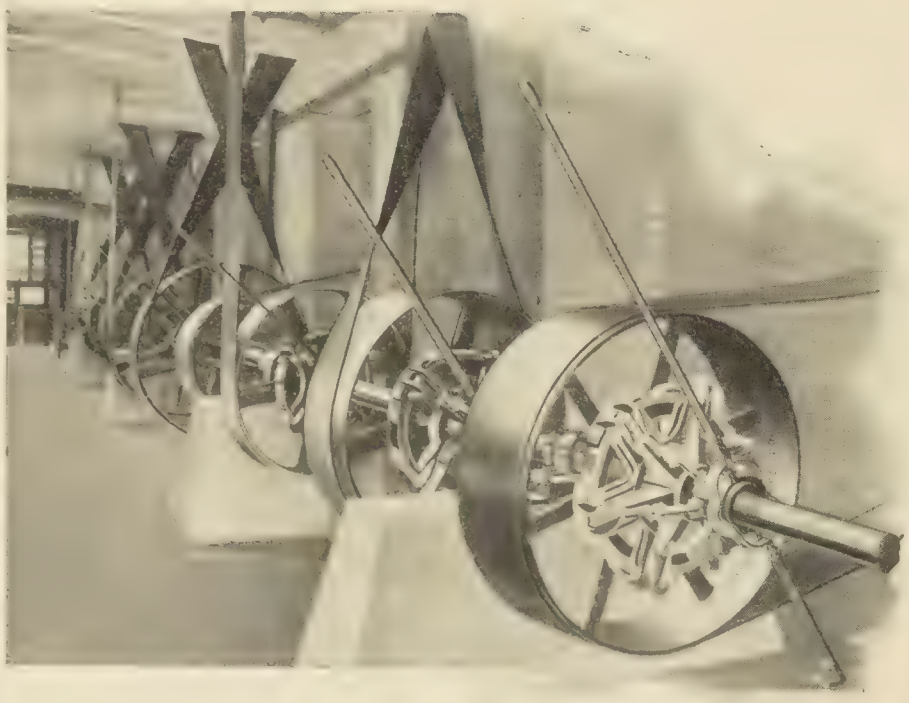
Screens
Open or Encased



Revolving, Shaking or Stationary.



Belt Conveyors—Storage System.



Line Shaft Equipment. Every pulley fitted with Friction Clutch.



Elevators. Any Material—Any Size.

Elevating, Conveying and Power Transmission

Weller Manufacturing Company, Chicago

NEW YORK	BALTIMORE	AKRON	ST. LOUIS	DALLAS	SAN FRANCISCO
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Exchange	711 Main St.	316 Rialto Bldg.

TRAUTWEIN-IZE

YOUR PLANT AND MAKE IT GIVE YOU INCREASED EARNINGS

Trautwein DRYERS

TRAUTWEIN DRYING APPARATUS is built to meet requirements, not a price. It is the most economical, durable and efficient of any equipment used.

TRAUTWEIN DRYING SYSTEMS are the result of years of practical drying experience.

TRAUTWEIN METHODS are not experiments.

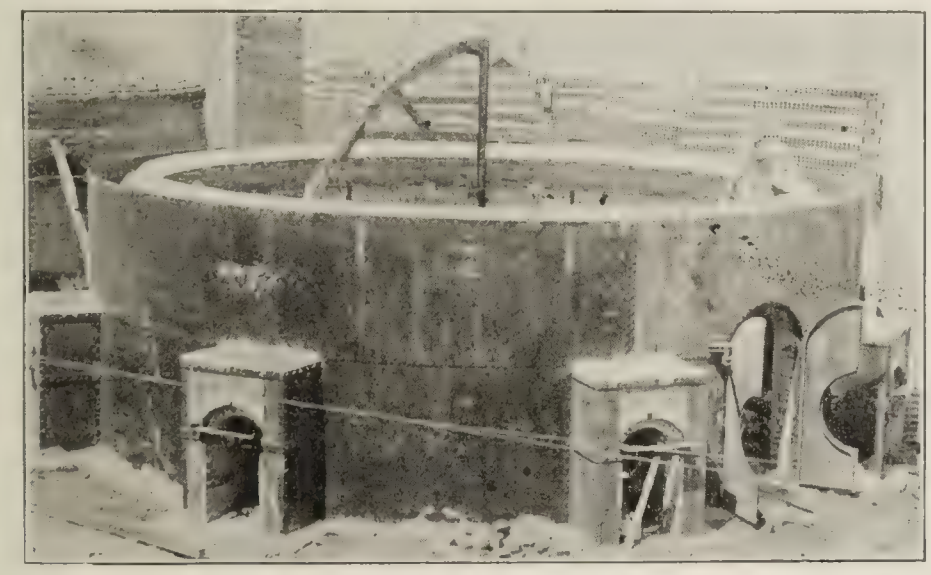
Trautwein DRYERS

It will pay you to correspond with us.

Trautwein Dryer & Engineering Co.

Manufacturers and Engineers

417 South Dearborn St. CHICAGO



Smith Steel Shell Kiln

Lasting Qualities

Note this—From a Prominent Clayworker—

"We have used a Steel Shell on a kiln for the last fifteen years and are now using it on a new kiln built this season.

"It is in good condition, good for fifteen years longer, and we like it very much."

Claude Smith Company

Kiln Builders

417 S. Dearborn St., Chicago, Ill.

Service to Clayworkers

Alliance Brick Co.....P- 8
Alliance Clay Pro. Co..P- 5
Alsey Brick & Tile Co..P- 4
Ambursen Co.....1089
American Clay Machy. Co. 1085
American Enameled Brick & Tile Co.....P- 8
American Process Co...1088
Arbuckle & Co.....1092
Atlas Car & Mfg. Co..1068

Baird Machine & Mfg..1067
Baldwin Loco. Works...1072
Ball Engine Co. (Erie Steam Shovel) 1068
Barnes-Crosby Co.....1063
Barr Clay Co.....P- 7
Barrett Mfg. Co..Front cover
Bartlett & Snow Co....1087
Bessemer Limestone Co..P- 5
Big Creek Colliery Co..1081
Bonnot Co.....1102
Bradford Pressed Bk. Co.P- 7
Brewer & Co., H.....1101
Broderick & Bascom....1028
Brown Instrument Co...1110
Buckeye Rolling Mill Co.1059

Caldwell Co., W. E....1063
Canton Grate Co.....1074
Carlyle Paving Bk. Co..P- 6
Ceramic Supply & Cons.1062
Chambers Bros. Co....1025
Chase Fdry. & Mfg. Co.1088
Chicago Bk. Machy. Co.1091
Chicago Retort & Fire Brick Co. .....P- 3
Cincinnati Frog & Switch Co. 1061
Classified Ads....1106-1107
Clearfield Machine.....1058
Cleveland Alloys Co...1066
Clinton Metallic Paint Co. 1062
Copping Bros.....1058
Cling-Surface Co.....1063
Clinton Paving Bk. Co..P- 5

Danville Brick Co.....P- 6
Davis Fire Brick Co....P- 3
Davenport Loco. Works.1060
Deavitt, H. M.....1058
Deckman-Duty Brick Co.P- 5
Dewey Bros., Inc.....1065
Dover Fire Brick Co....P- 3
DuPont Powder Co....1064

Engelhard, Chas.....1091
Estes, Inc., L. V.....1073
Evans Clay Co.....P- 3

Fate Co., The J. D.1108-1109
Freese & Co., E. M....1103

Gandy Belting Co.....1077
General Electric Co....1027
General Traffic Assn....1087
Gerlock, H. W.....1058
Globe Brick Co.....P- 8
Goodrich Co., B. F....1082
"Gripwell" Pulley Covering Co. 1059

Hamburg Vit. Bk. Co...P- 6
Hardinge Bros., Inc....1063
Hendrick Mfg. Co.....1060
Hetherington & Berner..1087
Hinde & Dauch Paper Co. 1062
Hook Patent Kiln Co..1075

Helpful Advertisements

The writer and designer of an advertisement, in order to work effectively, must "visualize" his readers—see them in his mind's eye.

He must put himself in their places, and see his proposition as they would see it, rather than the way it looks to him.

Having found their mental attitude, he must say what he has to say in practically the same manner that they would say it, if they were trying to recommend his machine, or method or device, to one of their friends and co-workers.

This fact illustrates the folly of the "announcement" style in advertising. The man who proposed to recommend you to his neighbor would not content himself with the mere shouting of your name.

Advertisements should be helpful. They should explain, carefully and truthfully, just what the man who pays for the advertising space, has for sale.

To buy space and fill it badly is a waste of money. It also wastes the readers' time, which is also money—at least to them.

Sometimes it destroys the readers' taste for reading advertisements—and that is a little like suicide.

The letter "P" preceding a number refers to the "Pink Section"

Jackson & Church Co..1076

Keller Brick Co.....P- 8
Kimbell, S. S., Brick Co.P- 8

Lakewood Engr. Co....1069
Lehigh Port. Cement Co.1066
Link-Belt Co.....1061

Mail Order Co.....1061
Main Belting Co.....1023
Manufacturers Equip Co.1078
Marion Machine, Fdy. & Supply Co. 1061
Marion Steam Shovel Co. 1079
Martinique Hotel.....1071
Maurer & Son, Henry..P- 3
Mayer Brick Co.....P- 4
McArthur Brick Co....P- 8
Metropolitan Pav. Bk. Co.P- 6
Mexico Bk. & F. Clay Co.P- 4
Mowrystown Brick & Tile Co. 1072
Murphysboro Pav. Bk. Co. .....P- 4
Murray Iron Wks. Co...1059

National Roofing Tile Co.P- 7
Nelsonville Brick Co....P- 5
Nuttall Co., R. D.....1067

Ohio Galv. & Mfg. Co..1088
Ohio Kiln Co.....1071

Pettigrew Foundry Co..1062
Phillips & McLaren....1070
Pittsburgh Tile Mfg. Co.P- 7
Price Electric Co.....1059
Purington Pav. Bk. Co..P- 6

Read & Day.....1063
Ricketson Mineral Paint.1058
Roessler & Hasslacher..1069

Sackett Screen & Chute Co. 1065
Sawyer Belting Co.....1090
Schaffer Eng. & Eq. Co.1089
Schofield-Burkett 1090
Shawmut Pav. Bk. Co...P- 6
Smith Co., Claude.....1021
Soisson Fire Bk. Co....P- 3
Southern Fire Bk. & Clay Co. .....P- 4
Standard Dry Kiln Co..1086
Steele & Sons, J. C....1105
Sterling Brick Co.....P- 4
Stevenson Co. 1080
Stowell, E. R.....1073
Stupakoff Laboratories..1060

Tecktonius Mfg. Co....1087
Terre Haute Vit. Bk. Co.P- 7
Thew Auto Shovel Co..1028
Thwing Instrument Co..1070
Toronto Fdry. & Mach. Co. 1064
Trautwein Dryer & Eng. Co. 1021

United Brick Co.....P- 5

Wallace Mfg. Co.....1104
Webb Wire Wks.....1060
Weller Mfg. Co.....1020
Williams & Co., C. K..1058
Woodhouse Chain Wks..1074

Zook, G. W.....1058

Leviathan

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan

Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan

Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Leviathan Belting

Belting

Book Department

Bibliography of Clay and Ceramic Arts (Branner).$2.00

Bricks and Tiles (Dobson)..... .....$1.20

Brick Drying (English Edition) $1.00

Brick Houses and How to Build Them (Radford)..$1.00

Bricklaying, Rudiments of Practical (Hammond)....60c

Bricklaying System (Gilbreth) $3.00

Brick Work (Walker)....60c

Brickwork and Masonry (Mitchell) $3.00

Clays: Their Occurrence, Properties and Uses (Ries).. .....$5.00

Clay Glazes and Enamels (Griffen) $5.00

Clays, Tables of Analyses (Crossley) $2.00

Clayworker's Handbook (Searle) $2.00

Economies in Brickyard Construction and Operation (Lovejoy) $1.00

Effect of Heat Upon Clays (Bleininger) $2.00

Engines and Boilers (Watson) $1.00

Engineering for Land Drainage (Elliott) $2.00

Estimating and Contracting (Radford) $2.00

Garage and Motor Boat Houses $2.00

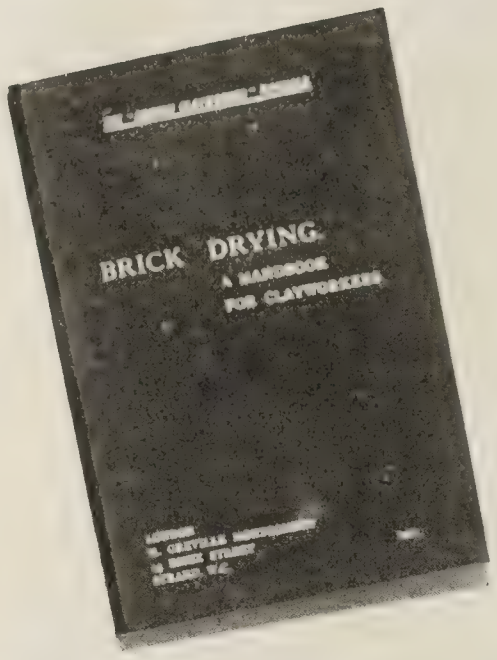
Glazer's Book (Raes)...$1.00

Handbook of Steam Shovel Work $1.50

Hollow Tile House (Squiers). $2.50

How to Analyze Clay (Ashby) $1.00

How to Read Plans (Radford) 50c



194 Pages, 7x4 3-4, 125 Illus. . . $1.00

A PRACTICAL TREATISE on the drying of brick and similar clay products, by Arthur E. Brown, B. Sc., an authority on the subject. It contains chapters on the principles of drying, the properties of air and moisture, hygrometry, porosity and permeability of clay, the phenomena of brick drying, scumming, effect of consistency, size and shape.

It takes up drying by absorption, open air drying, hacking, skintling, the effect of frost, the methods of heat supply, ventilation, fans and chimneys.

It gives the general classification of dryers, and discusses their relative merits. It goes into the problems of dryer cars, tracks, dryer equipment and installation. Clayworkers who have dryers will do well to read this work, as will those who intend to build new dryers the coming year.

It is on sale, through "Brick and Clay Record's" Book Department, for $1.00 postage paid.

Manufacture of Glazed Bricks (English Edition).....$2.50

Manufacture of Roofing Tile (Worcester) 75c

Manufacture of Roofing Tile (English Edition).....$1.00

Masonry (M. A. Howe) .$1.50

Modern Brickmaking (Searle) $5.00

New Competition (Eddy).... .....$1.50

Notes on Pottery Clays (Fairie) $1.50

Observations on Pottery (Beckwith) 60c

One Hundred Bungalows (BBA) 50c

Pottery (Geo. J. Cox) .$1.25

Practical Brick and Tile Book (Dobson-Hammond) ...$2.40

Practical Farm Drainage (Elliott) $1.50

Practical Lessons in Architectural Drawing (Wm. B. Tuthill) $2.50

Producer Gas and Gas Producers (Wyer) $4.00

Producer Gas Fired Furnaces (Nagel) $2.00

Profitable Wage.....$2.00

Refractories and Furnaces (Harvard) $4.00

Scumming and Efflorescence (Lovejoy) 50c

Seger's Collected Works (Condensed) $3.50

Sewage Disposal Works: Their Design and Construction (Easdale) $4.00

Sewage Disposal (Fuller).... .....$6.00

Sewers and Drains (Marston) $1.00

Sewer Pipe and How to Make It (Vogt-Turner) 25c

Smoke Prevention and Fuel Economy (Booth).....$2.50

Vitrified Paving Brick (Wheeler) $2.00

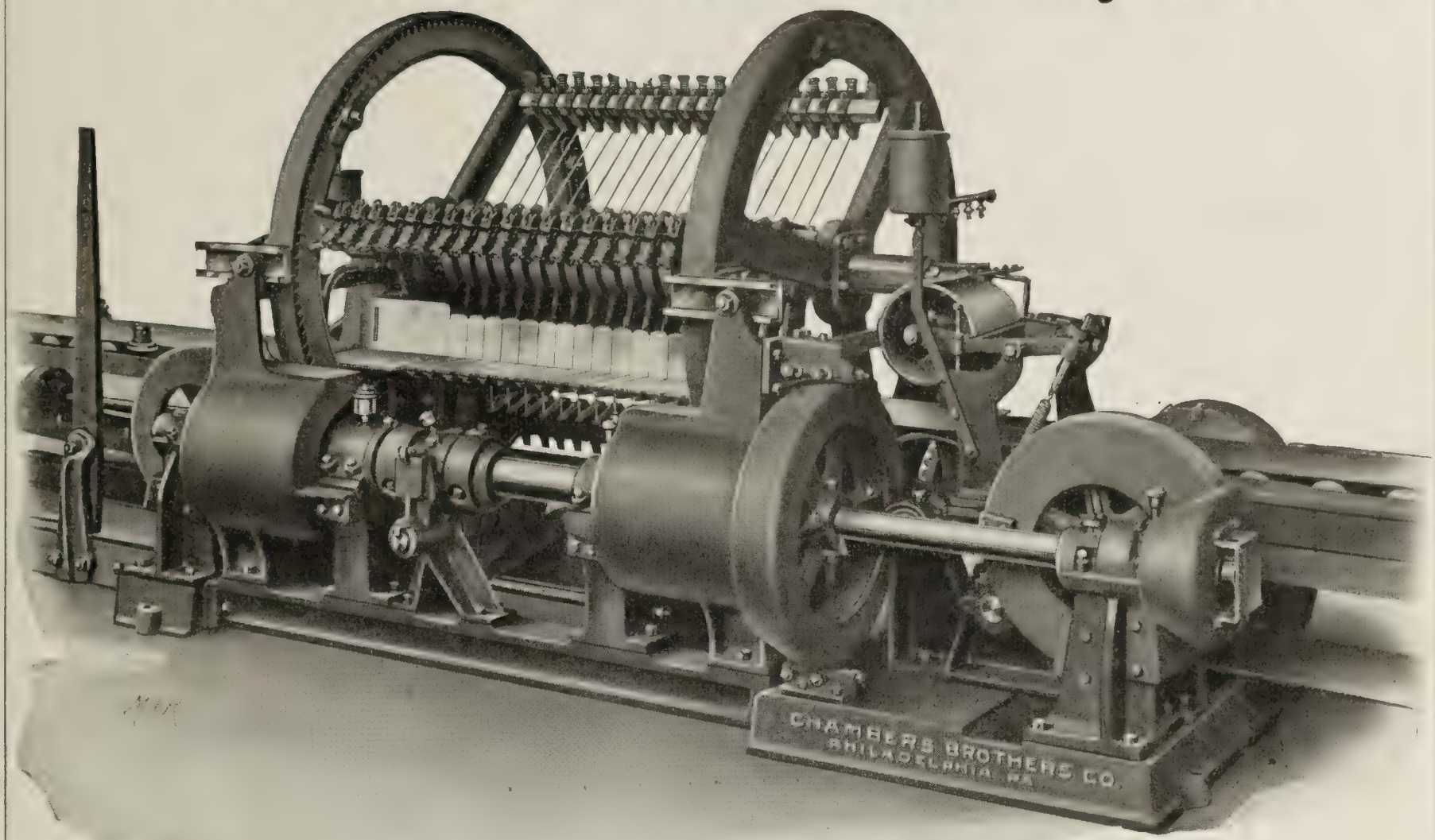
Address All Inquiries to

Brick and Clay Record's Book Department

445 Plymouth Court, Chicago, U. S. A.

New Multiple Brick Cutter

That Does Not Swell the Clay Bar



Automatic Side Cutter No. 10, Built by

Chambers Brothers Co., Philadelphia, Pa.

A frictional driven Cutter for Brick or Block that starts promptly and stops at completion of its stroke without noise or shock.

Entirely free from knocker clutches or similar throw out devices.

Driven through an enclosed cone friction of ample diameter and so arranged that the slight lateral movement employed to disengage the friction members upon completion of a cutting strike applies a brake to the entire periphery of the floating member. The result is highly satisfactory.

All revolving parts of the cutting mechanism, together with the platen, are suspended from a stationary steel shaft, the reel hub being upon roller bearings. There is no running machinery beneath the platen, no track or wheels for the support of a carriage, and no parts into which chips can be thrown by the cutting wires. Pressure by one finger will move the cutter endways in either direction.

Observe the enclosure of all gears, not only for their protection, but as safe-guarding against accidents.

Speed-regulating features meet the requirements of machine output and of tender clays. Adjustments to meet various conditions are made without stopping the machine, and are absolutely within control. The underside of clay bar is lubricated by a new method, using only so much lubricant as is required. No slop and no needless waste. A strong, durable, well-built Cutter.

Go to Chicago With Your Ad Man

Attend with him the Big Convention of Associated Advertising Clubs of the World, June 20 to 24, 1915

You will assimilate more knowledge of modern methods of Advertising, Selling, Distribution, and Management during these five days than could be obtained in a lifetime of book study.

You will be brought in touch with the men who have done and are now doing the big things of business. You will participate in the biggest business meeting the world has ever known. You will listen to the expressed thoughts of distinguished Americans concerning present day and future business movements.

You will enjoy Chicago's wonderful park system, boat rides on Lake Michigan, modern hotels, theatres, and other amusements, including the big street pageant, and the Gridiron Show given at the Auditorium Theatre by 150 Chicago Advertising men.

Distinguished Speakers. President Wilson, State conditions permitting, will head the notable array of speakers. Hon. William Jennings Bryan, George Horace Lorimer, Arthur Brisbane, John H. Fahey and Henry Watterson are among the others who will be heard.

Advertisers in and publishers of trade and technical journals will hold special Departmental meetings to discuss their own problems and learn how they can co-operate to better advantage. Other departmental meetings will take up such subjects as catalogues, engraving, printing, mailing lists, sales plans and kindred subjects.

The ladies are wanted, too. Special entertainment—teas, luncheons, automobile trips, etc., is being arranged for them by Mrs. Chas. H. Porter and her committee.

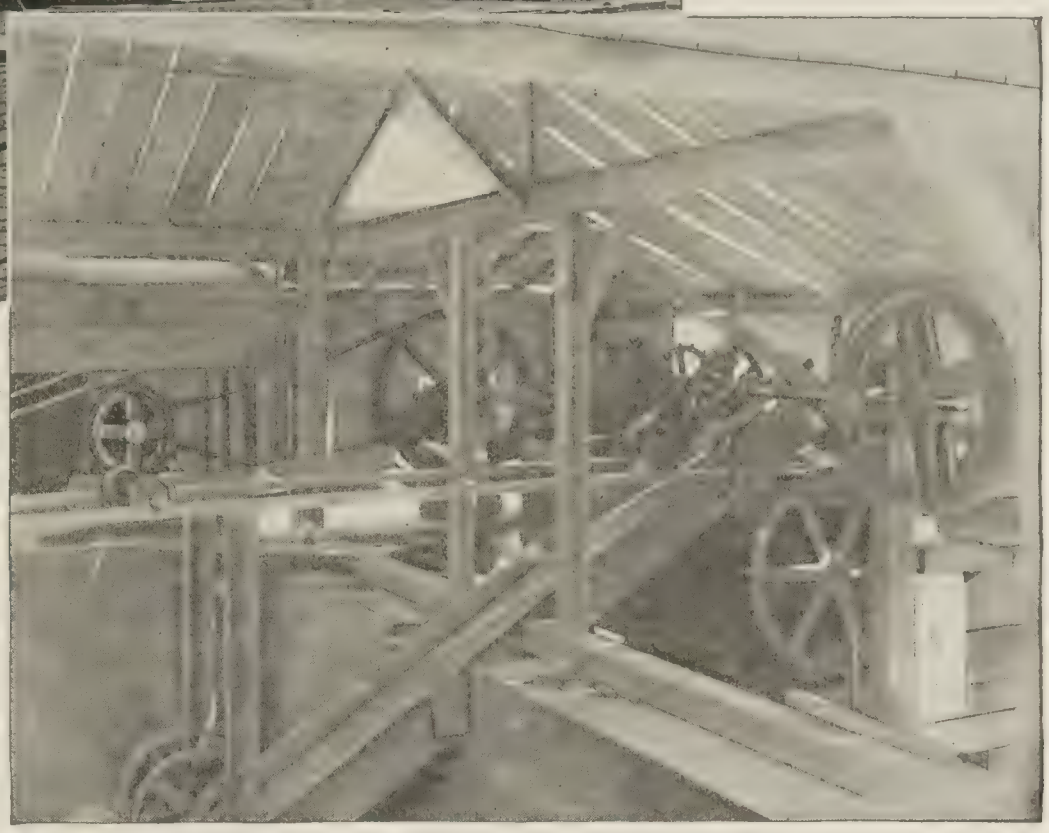
Clear up your desk. Take a five days' vacation in a lake-cooled city. Mix with the business builders. You will return a better business man; a better physical man; and a better thinking man.

For further information, programme, rates, etc., address Convention Bureau, Advertising Building, Chicago, Ill.

Brick & Clay Record, Chicago, Illinois



Brick Plant, U. F. and J. T. Washburn Co., East Kingston, N. Y. G-E Motor Drives in each building shown in foreground.



35 H. P. G-E Motor Driving Elevator Pug Mill and Brick Machine, U. F. and J. T. Washburn Co., East Kingston, N. Y.

Not one cent spent for repairs. Seven G-E Motors Used.

Several years operation in the brick plant of the U. F. and J. T. Washburn Company at East Kingston, N. Y., show G-E motors in this brick plant cost not one cent for repairs.

Motors made by the General Electric Company are built to last. All parts are made amply strong and with thoroughly sufficient current carrying capacity.

It pays to buy motors whose upkeep is negligible and whose overload capacity is ample to meet emergencies.

The General Electric Company has engineer salesmen at its local offices who will be pleased to quote on suitable apparatus to meet your conditions.

General Electric Company

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dayton, Ohio
Denver, Colo.
Des Moines, Ia.
Elmira, N. Y.
Erie, Pa.
Fort Wayne, Ind.
Indianapolis, Ind.
Jacksonville, Fla.
Joplin, Mo.

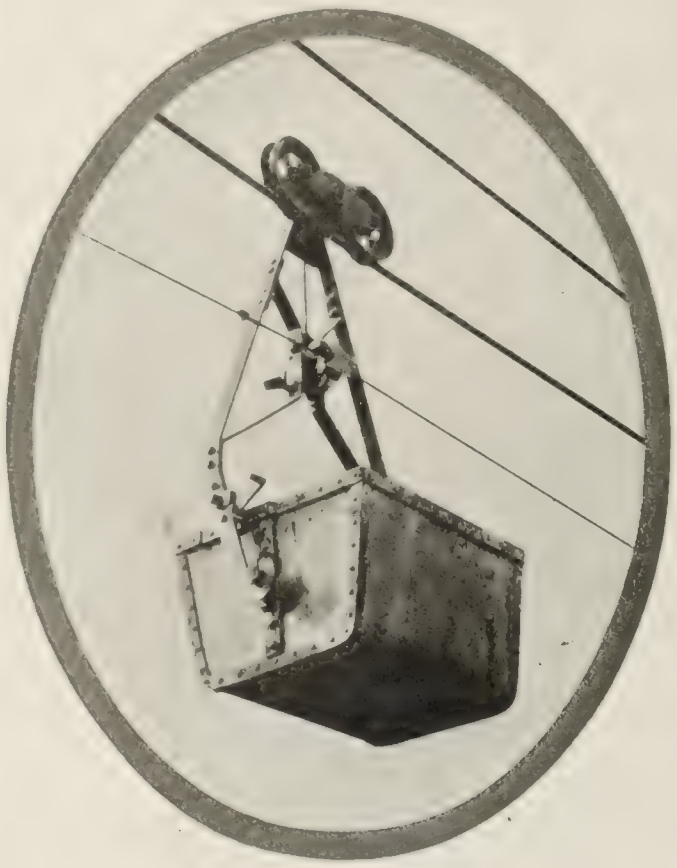
General Office: Schenectady, N. Y.

ADDRESS NEAREST OFFICE

Kansas City, Mo.
Knoxville, Tenn.
Los Angeles, Cal.
Louisville, Ky.
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Nashville, Tenn.
New Haven, Conn.
New Orleans, La.
New York, N. Y.
Niagara Falls, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
Salt Lake City, Utah
San Francisco, Cal.
St. Louis, Mo.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

For Michigan business refer to General Electric Company of Michigan, Detroit, Mich.
For Texas, and Oklahoma and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City. For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 5190

Motor Agencies in all large cities and towns



Tell Us Your Haulage Conditions We'll Tell You How to Save Money

TELL us what you are doing and under what conditions. Then our Tramway Engineers will show you which of the various B. & B. Aerial Tramway Systems best meet your requirements, and what it will cost to operate—how much money it will save you each year.

The B & B Friction Grip

as used on our Friction Grip System is distinct and different. It is our Patent Screw Type Grip, which automatically adjusts itself to any variation in the diameter of the pulling rope. It has an enormous gripping power on the cable that absolutely prevents run-aways, even on steepest grades.

We want to post you thoroughly, without any obligation on your part. Write us. ASK FOR CATALOG NO. 16. We have a Seattle factory, for promptest handling of all Pacific Coast orders.

FREE. Our monthly magazine, THE YELLOW STRAND, for one year to all rope users. Write for it.

BRODERICK & BASCOM ROPE CO.

ST. LOUIS, MO.

Branches: New York and Seattle Agents Everywhere



66,000 Brick at a Cost of Only $6.37

Including Engineer, Helper, Coal and Water

A report received from the Walker & Frank Brick Co., Detroit, Mich., recording test of the type O Thew Shovel, made August 7, 1914, was as follows:

Clay handled in 8 hrs. 10 min.	160 cu. yds.
Number of cars loaded	86
Capacity of cars	2 cu. yds.
Average loading time per car	3 min.
Daily output	66,000 brick
Total cost for engineer, helper, coal and water	$6.37

Complete information regarding this and numerous other tests under conditions similar to your own will be sent upon request.

Ask to be shown the facts and request copy of "Booklet A."

FULL CIRCLE SWING THEW HORIZONTAL CROWDING MOTION ELECTRIC SHOVELS

THE THEW AUTOMATIC SHOVEL CO. LORAIN, OHIO

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, June 1, 1915

Vol. XLVI No. 11

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

Table of Contents

Buying Face Brick 1039
Electricity and Efficiency 1034
Home-Made Coal Unloader 1042
Soil Moisture and Crop Production 1058
"Straight from the Shoulder" . . . 1032
The Dividend Payer 1045

The Editor's Corner 1030

Freight Tariffs and Troubles 1054
Letter Box 1053
Machinery and Equipment 1055
Pottery Notes 1075
Questions and Answers 1049
Semi-Monthly Trade Review 1062
The Superintendent 1051
Wake of the News 1066

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture

A WELL KNOWN BUILDER, returned to Chicago after a trip to the Panama-Pacific International Exposition, reports the fact that he visited the model residence that has been erected in the space devoted to the State buildings, by a comparatively small group of brick manufacturers.

He says that the house is a marvel of beauty. He knows good brickwork, and says that this house is as fine an example of good bricklaying as he has ever seen. He says that the design is interest-compelling—that the fulfillment of the architects' dream is better than any picture of the house that has been published.

Perhaps "dream" is the proper word, for the house, in direct contrast to everything about it, is fast asleep. The doors are locked, the windows fastened. Its owners—the brickmakers of America—have gone fishing. The Chicago builder, with fine irony, slipped his card under the door, having written a "Good Luck" message to the people who will come back to their house, maybe before—maybe after—the throngs that are crowding the Exposition have gone home.

Meanwhile, the Redwood bungalow is fast nearing completion. In a few weeks—perhaps days—thousands of men and women, interested in the most fascinating of all work—home-building—will pass by the untenanted brick house, to the one that is pulsing with life—the life that brings orders and sells outputs and keeps up prices.

An earnest effort is being made to raise the funds necessary to put a tenant in the brick house—a tenant who will explain the things that brickmakers are explaining day after day, in their effort to wrest an order from some fellow brickmaker—that brick is better, more beautiful, more economical than frame. A tenant who will impress the fact that fire-resistant construction is possible, even to the man who has but a limited sum to spend upon building his home. A tenant who will show that this house is typical of a new order of American architecture—a safe and sane architecture that enables a man to house his family "safe from fire"—not because fire-limits compel, but because a hundred sound business reasons make it logical to "Build with Brick."

Some of you men who have received letters from the Panama-Pacific Clay Products Association, asking you for subscriptions, and who have replied, perfunctorily, that you "are not interested", are setting back the hands on the clock of building progress. You are, in a way, hanging crepe on the door of this little house, signifying that the industry it sought to benefit is dead—dead to the influences that have led other industries into similar publicity plans—industries that, while not as old as brickmaking, are infinitely more prosperous.

How You Can Help Yourself

Perhaps you did not think we were in earnest when, in the last issue of this magazine, we asked you, as one of our readers, to give us the benefit of your advice. Perhaps you felt that, even if you did give it, it would be worth little—little to us and less, perhaps to you.

It is for that reason—and to give you a further insight into the thought that is the foundation of every department of this paper, that four pages of the reading matter in the present number are devoted to a description of our work, and to the task of enlisting your active co-operation.

A magazine may be one of two things—a publication, or an institution. If it is one-man-edited and issued for the sole purpose of carrying a line of advertising, it is a publication. If

The Editor's Corner

it is edited by many men, each trying to help himself by helping others, it is an institution.

Each of you that has invested the price of a subscription in this magazine is entitled to his money's worth, and more. That was promised in the beginning, and the promise is being fulfilled. But there is a greater investment that you can make—the investment of your advice.

It may be that you are not very well acquainted with "Brick and Clay Record." Many subscribers are still, to a great extent, strangers. One department or another has interest—they read that and "let the rest go" until some time, in the dim and distant future, when they "have more time."

Somehow or other that is very like a man's buying a carload of brick, using a few, and letting the rest stay in the car for the section hands to dump in some gully along the right-of-way. It represents a greater economic waste than is represented by the time you would take to read the magazine from cover to cover.

"Brick and Clay Record" represents the vital force of the industry. It has a right to say this, for scarcely a day passes but that one of its readers helps it, by widening its sphere of helpfulness. The man who submits his problem to "Questions and Answers" starts a movement that may benefit a hundred clayworkers.

But you—who do not write—whose opinion is taken as legal tender in your plant, your home and in your town—you have something to say to us, if only to point out that part of the magazine which does interest you. It may be that we are expending a great deal of time, and some money, on something that is of little use to the greater part of our readers. You can help us to remedy that—and to make a greater effort along lines that are of real value to you.

Turn over the pages of this issue, until you come to the page headed "The Dividend Payer" and read it—every line. It will give you a better idea of one of the features of your business—for that is what "Brick and Clay Record" is, or eventually will be, if not now.

Burned Clay Tile

The recent dry weather, followed as it was by a very general and very heavy rainfall, must have demonstrated the value of artificial drainage to thousands of farmers. The excellence of the crops that will be raised on tiled lands as compared to the disappointments that will come to those who depended upon Nature to care for the seed they had sown, will be excellent object lessons in favor of clay drain-tile.

The agricultural papers should be carrying a large amount of drain-tile advertising advocating the best of all drain-tile, which is burned clay. The farmer knows—now—that he ought to heed the advice that confronts him from many roadsides, where "Brick and Clay Record's" blue and white "Tile Your Farm" signs point the way to improved farming methods. There is little use of "educating him to use tile" —the education he needs is in the the kind of tile to use. And that, to paraphrase the signs, is "Everlasting Burned Clay."

The State Associations

This is the season of the year when the state associations of clayworkers should be at work, proving that they are something better than social bodies, destined to meet in convention once a year—listen to some papers, pass some resolutions, collect a mere pittance in the way of dues—and then take a rest until another year calls them together again, to do the same thing over again.

The national associations (particularly those with permanent and contributing membership, and with paid secretaries) are busy all the year round. They find that the weeks have too few days, the months too few weeks, in which to do the work that is so pressing. They must, from the very nature of their organizations, deal with problems that cover wide fields, and set aside those that are pertinent to any one section of the country.

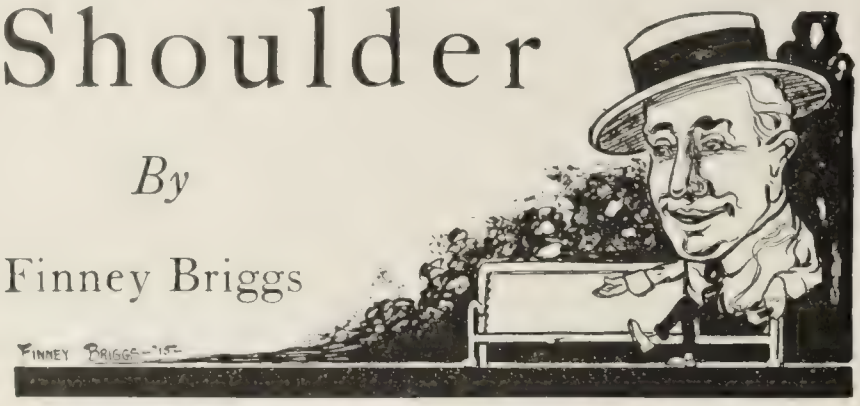
The state associations cannot, as yet, consider the proposition of a permanent organization, although the amount of money invested in the clayworking industry of almost any state would indicate a need for the constant services of at least one man who would work for all of the clayworkers of that state, devoting his entire time to the betterment of their condition.

But they can, by holding executive committee meetings at least monthly, map out the various lines along which to effect an improvement in selling methods, or a more intensive campaign for an exteded use of clay products.

Straight from the Shoulder

By

Finney Briggs



"Sit down a moment, if you've time
The while I spin for you
A rhyme." Said Fuller Pepp
One summer day
The while
He idled time away.
"Four years ago 'twas
I first planned a home,
So bought a piece of land;
Sought studiously
To select the best home
That I might erect.
Among materials offered me
The only one
That I could see was one
I **knew** would sure remain the same
After years of snow and rain.
So I made up my mind
To stick, and build my home
Complete—with brick.
Jim Dubbs, my neighbor,
Laughed at me.
"Look at the house I've built"
Said he,
"Aint it a dandy?
All of wood, cheaper than yours
And just as good!"
But he couldn't get my goat—
Instead
Work on my house went right ahead.
Altho' Jim Dubbs
Had lots of fun with me,
Ere long my home was done.
And time went on,
'Til came the night that proved
My choice of brick was right.
I woke
With sudden start and shock,
To find flames menacing
The block in which our home was.
Soon they spread, fanned by the breezes
Overhead.
Finally we all
Were forced to flee, including Dubbs,
Next door to me.
And as we looked,
A wall of flame enveloped
Dubbs' new house of frame!
Next morn, Jim Dubbs
In sorry mood looked sadly
At where his home **had** stood;
Then gazed with bleary eyes,
And pained, to where
My home alone remained.
Says Jim, "Tho' now my home
Is burned, my friend,
I have a lesson learned!
Of **cheapest** house
Let no one boast, for **cheapness**
Often costs the most.
But for the bogey of
Initial cost
My home, today, had not been lost!
Believe me,
When I build anew, I'll see
A mason with a trowel and hod
Instead of lumber man—." (He swore)



"Then gazed with bleary eyes and pained to where my home alone remained"

Let Us Tell You What Happened—

When Italy tottered off the verge and became one of the active participants in the European "unpleasantness" the port of Triest, in Austria, ceased to be a point from which shipments to neutral nations could be made safely.

Since it was through this port that Austrian magnesite was being shipped to America, it is fair to presume that the already limited supply which is now on hand will not be increased until peace is declared.

The principal sources of supply have been Radenhein, Hisnyoviz and a point near Budapest. None of these plants have been producing to anything like capacity for the past several months—this being due to the number of workmen who have been called to take their places in the Austrian armies. This has, of course, affected the amount of magnesite which has been shipped, and in view of the fact that for what seems to be an indefinite period no shipments can be made from Europe, it would appear that it will be necessary for American users of magnesite and magnesite brick to turn to domestic sources of supply.

Experiments have been made with the Canadian magnesite and from present indications the preparation of this can be put on a commercial basis, and so prevent the absolute falling down of the magnesite supply.

The same may be said of the California magnesite, and as a consequence, the misfortunes which have come to the importers of Austrian magnesite will bring better times to those who have magnesite deposits on the Pacific coast.

The California magnesite has already been handled by some of the eastern plants and a commercial magnesite reduced that will, it is expected, take care of the industries that have depended for many years upon grain magnesite and magnesite brick. These industries are, for the most part, interested in the manufacture of open hearth steel, and it is said that, unless we are able to produce a good magnesite brick from domestic manganese, when the bottoms of the furnaces that are now employed in making open hearth steel are burned out, the manufacture of that very necessary material (particularly necessary in times of war) will cease.

Prominent Clayworker Suddenly Dies

Robert C. Nesch, late president and general manager of the Pittsburg (Kan.) Paving Brick Company, and president of the Western Paving Brick Manufacturers' Association, died the night of May 19 at his home in Kansas City, Mo., after a brief illness.

Mr. Nesch was sixty-two years old, and came to this country from Switzerland in 1869. Six years later he founded the Pittsburg Paving Brick Company, which was made a success from its very start, and it was one of his boasts that since the plant opened it had never been necessary to miss a single pay day.

His will, filed in the probate court at Kansas City, Mo., May 25, disclosed an estate of about $300,000. Henry R. Nesch and Emory E. Trowbridge were named as executors. The latter will assume the active management of the company and plant, which is being operated very close to capacity.

Southern Paving Brick Manufacturers Organize

A new association has recently been organized in Birmingham, Ala., for the purpose of promoting the use of vitrified brick for streets and highways. The new association will co-operate fully with the parent organization which is the National Paving Brick Manufacturers' Association and is, perhaps, the first local organization subsidiary to the one in Cleveland.

Offices have been established in the Brown-Marx Building in Birmingham, and John W. Sibley has been appointed secretary-treasurer. A meeting will be held, June 8, at Columbus, Ga.

Southern Pacific Making New Tariff on Tile

In line with its development work in the west, the Southern Pacific Company is compiling a new tariff which will allow drain tile and brick to be handled in the same car at rates that formerly applied to straight carloads only.

A more general use of drain tile in the Willamette valley, particularly by the smaller communities and land owners, has been held back because the slow sale of drain tile has not warranted the small dealers to invest in carload quantities. It is thought that by permitting brick and tile to be shipped in the same car, it will be much easier for both the dealer and farmer to obtain tile without ordering a large quantity. There is no doubt but that this new ruling on the part of the railroad company will result in a more extended use of this product in that section of the country.

Straw Packing Bill in Illinois Legislature

On April 21, a bill was introduced in the Illinois State Legislature at Springfield which aims to institute additional precautions against the spread of the foot-and-mouth disease which has played havoc abong the herds of the cattlemen of that state, by compelling the fumigation of straw packing used in the shipment of brick, pottery and other clay products. The bill reads as follows:

'There shall not be packed for transportation or transported over any public highway, steam or electric railroad in this state any brick, tile, terra-cotta or crockery ware, in straw, or hay unless the same has been thoroughly fumigated and disinfected so that there will be no danger of the spread of contagious diseases. This does not apply to such articles when packed in a tight wooden box or crate, that will prevent the packing from losing out while such articles are in transit. Penalty for violation, fine of not less than $1.00 nor more than $200.00 for eac' offense."

It was referred to the House Committee on Judiciary.

Potter in Chinese Delegation Visiting United States

In the distinguished party of Chinese business men who visited Memphis, Tenn., on a special train a few days ago and looked over the manufacturing and business interests with a view to further trade promotion was Sheng Chen, manufacturer of lacquer and cloisonne, Peking, proprietor of the Te Yuan Heng Lacquer Ware Company and the Te Chang Cloisonne Ware factory at Peking. The party was traveling on a special train, several millionaires and distinguished business men being in the party. Chicago and New York were other points on the itinerary.

Contract for Wilkes-Barre Brick Plant Let

The Wilkes-Barre and Hazleton Brick Company, a newly incorporated concern, has awarded the contract for the erection of its plant near Wilkes-Barre, Pa., to Schmitt and Company, of Hazleton. The building, it is estimated, will cost $70,000.



A Part of the Power Plant

Electricity

The Two, in Unison, Strike the Chord that is the Keynote of Clay Plant Success. Here Inventive Genius Finds the Co-operation of Capital

FOLLOWING its policy of featuring clay plants which, on account of up-to-date equipment, set the pace for the industry, "Brick and Clay Record" offers its readers a description of the Vincent Clay Products Company, of Fort Dodge, Iowa.

By J. P. Mallett

The Society for Electrical Development.

ALMOST INTERESTING PLANT FOR the manufacture of drain-tile is located at Shady Oak near Fort Dodge, Iowa. Efficiency seems to have been the watchword of this company from the very inception of the plant, so that a brief description of some of its most important features will surely be of value to the industry.

Figure 1 shows the plant and its general surroundings, which signify order and prosperity. The factory is located on a hillside with a branch of the Fort Dodge, Des Moines & Southern Railroad running directly past its doors, which provides splendid shipping facilities to or from the plant. The buildings are made of brick throughout, purchased from a nearby brick manufacturer. The excavation of the hillside necessary for the foundation of the mill opened up at the back of the mill the shale bank with a face 1,100 ft. long and 8 ft. high. This shale bank rests on a base of white silica rock, which provides good drainage and, on account of its high elevation, no pumping of drain water is necessary. Here is a saving in the cost and maintenance of the pumping plant, power and time.

The shale is mined and loaded into cars which are hoisted electrically into the storage building to a place about 20 feet above the dry-pan. At this place the shale may be dumped into a chute leading through a feeder to the dry-pan if wanted for immediate manufacture or, if not required at the time, may be led through the feeder into the storage bin, which is 30 ft. wide and 80 ft. long. This arrangement allows the mill gang to work independently of the pit gang, so that, if for any reason it is found necessary or desirable to run the mill when the pit gang is not working or vice versa, it can be done for a considerable length of time without serious loss; the storage bin referred to will supply the mill with the shale for some time, even though the pit gang may be idle, and it will also allow the storage of the shale which the pit gang may be getting out even though the mill may not be running.



Figure 1. The Plant of the Vincent Clay Products Company

and Efficiency

A Well Designed Plant, Built Near an Inexhaustable Clay Supply and Adopting Modern Power, Finds No Difficulty in Earning Good Dividends

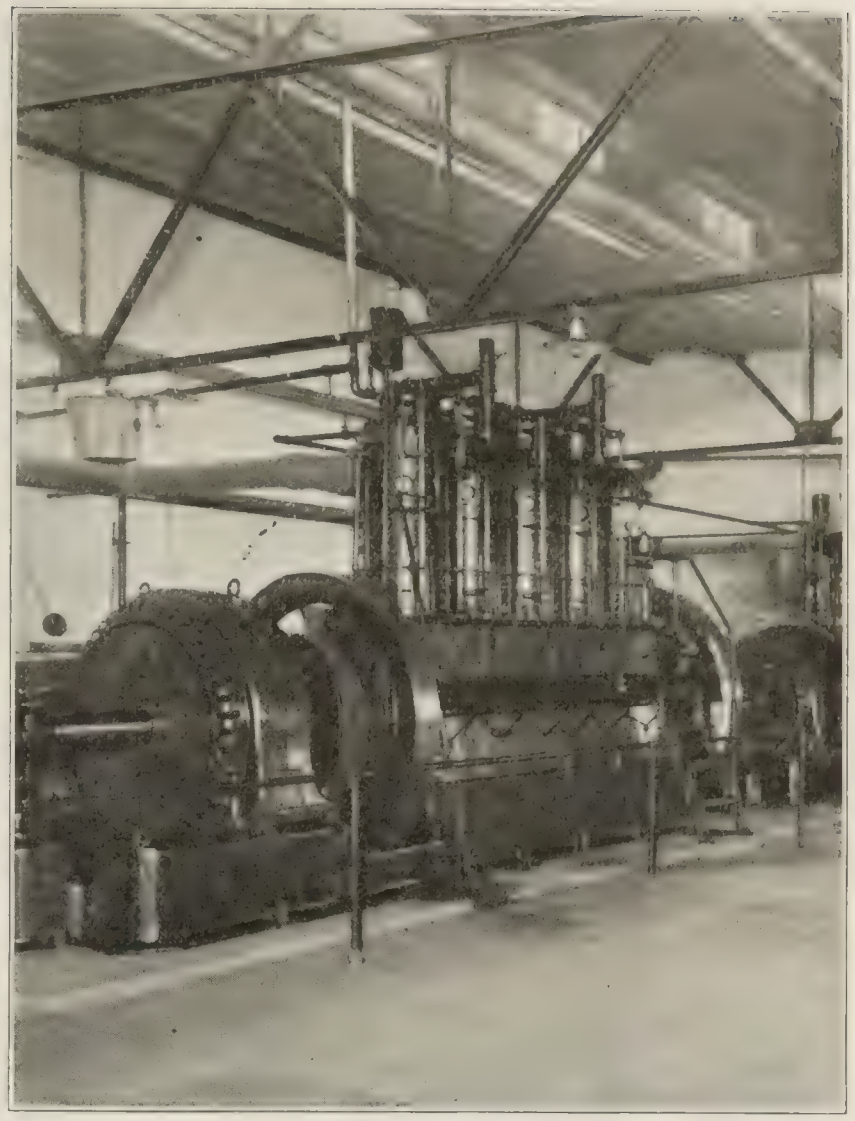
When drawing on the reserve supply of shale, it is shoveled from the bin into an electrically driven conveyor (Figure 2), on which it is carried to the top of the chute which joins that leading from the top of the hoist, to the dry-pan (Figure 3), and through which the shale is run when taken directly from the pit cars. After passing through the dry-pan, the material is carried by gravity through another chute to the pug-mill in the next room where it is pugged and tempered with hot water.

The machine room contains two machines, one the down-delivery for making tile 4 to 8 ins., and the other horizontal delivery for making pieces from 10 to 30 ins. The former has a system of dressing and conveying which was invented and patented by G. E. Goldner, formerly superintendent of the plant. By this method the small pieces of tile are delivered on end on a conveyor on which there are fastened a number of plates or discs having a circular groove corresponding exactly to the ends of the finished tile. As the tiles are moved along on the conveyor, one man can dress all the tile by simply giving each one a turn or twist as it passes him, thereby saving both time and labor. The larger size tile, which is made on the down-delivery machine, after being cut are moved to one side of the machine on a pallett, where a patent tile-lifter picks them up and places them on the car.

The lifter consists of a piece of sheet metal made into the shape of a cylinder. This cylinder can be adjusted in diameter so that when it is lowered down around the outside of the tile, it can be tightened around the ware so that it can be picked up and moved without the slightest chance of damage. These cars containing green ware are then moved along the track to an electrically operated elevator which lifts the cars to the proper level in the dryer. The dryer (Figures 4 and 5) is located in the west end of the kiln and has three floors or decks. The lower one contains twelve tracks for drying the small size of tile, the second also has twelve tracks for the medium size and the third has fourteen tracks for the largest size. It is notable that sizes up to 20 ins. are dried without palletts.

Waste heat from the kilns and engines is used for drying purposes and is forced into the dryer by means of a large electrically driven fan. From the dryer the cars are moved by an elevator to the yard level in front of the kilns where there are two tracks, one for empty cars and one for loaded cars which come from the dryer.

The kiln is a continuous one of the Hoffman type, and has eighteen chambers. In front of each chamber door is an arrangement for lifting or elevating trucks whereby all the cars that come from the dryer are elevated upon this truck and taken into the chamber sideways. The double track arrangement along the sides of the kiln makes the transfer men and stores independent of each other. The kiln is supplied with a forced draft which is generated by a large fan electrically driven. Oil is used as fuel. The burner is placed at the top of the kiln where the operator can see the flame in each chamber as it is forced from the top, clear to the floor.



One of the Generators

Each chamber is burned twenty-four hours, after which approximately three or four days are allowed for cooling.

There are many labor-saving devices and cost-reducing appliances to be seen throughout this plant, but perhaps its most distinguishable feature and one which holds the greatest interest for every clay products manufacturer, is the form of power used and its application. Electricity has not only been adopted as the desired power, but it is applied in the most efficient manner known, namely, by individually motor-drive. Each machine, wherever located and for whatever purpose

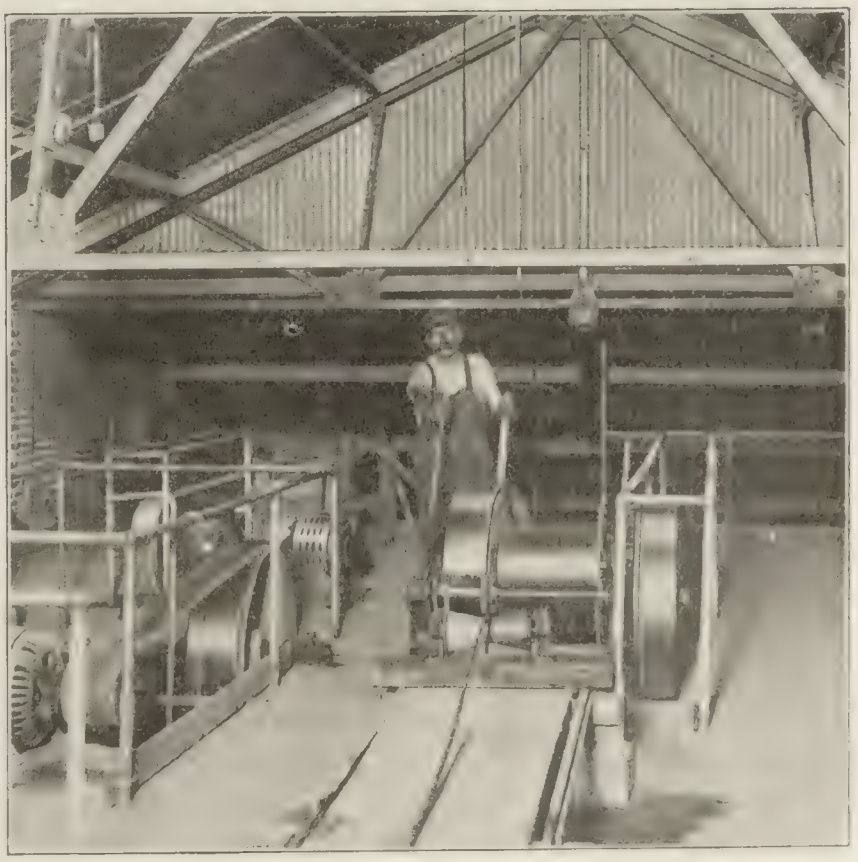


Figure 2

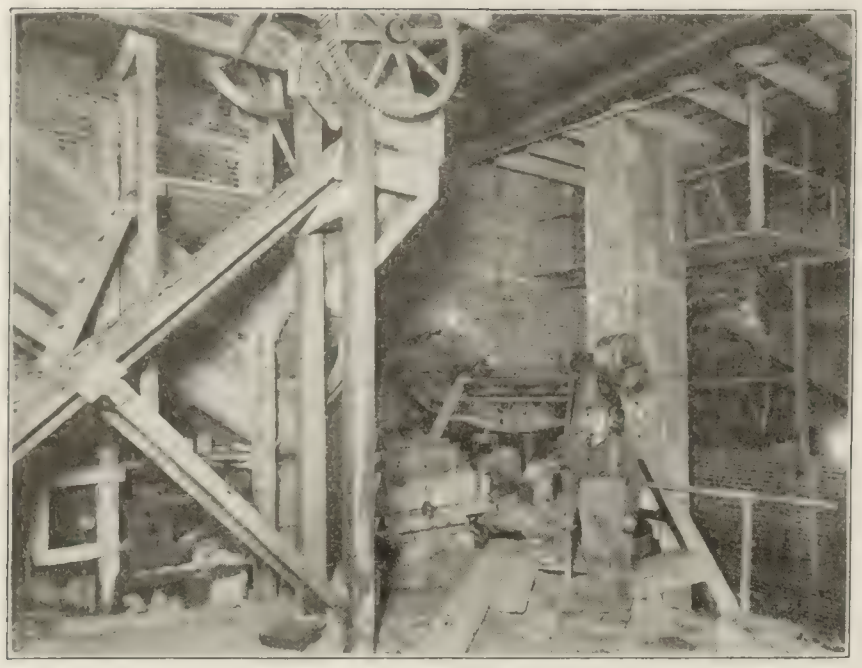


Figure 3

used, has its own motor so that it can be operated or shut down as may be desired at any time without respect to any other machine in the plant. No central station is near at hand, so this company has its own generating plant, which consists of two units, one 175 K. W. 220 volt A. C. generator direct connected to a Fairbanks & Morse engine, and the other a 75 K. W. A. C. generator direct connected to a Fairbanks & Morse engine. The larger unit being used for day service and the smaller one for night service or such other time as when the smaller capacity unit is sufficient, gives maximum efficiency under both conditions and an opportunity for necessary inspection and repairs. A distillate oil is used in these engines.

The storage of the engine oil and also that used for the kilns (which is of a cruder nature) is in two large storage tanks of a capacity of 60,000 gallons, which have been sunk in the ground in the south part of the yard, one for each grade of oil. Steam pipes leading from the plant encircle these oil tanks, so that no matter what the temperature may be, the oil can be kept at a temperature that will permit its flow easily in the pipes from the tank to the engines and kilns.

Aside from the pumps which are used in moving the oil, there is a small pump used for compressing air for the oil burners. Perhaps the most convincing expression of the satisfactory operation and efficiency of any plant is the excellence and consequent demand for its product. At this plant it was originally intended to make both drain-tile and hollow building block, but the constantly increasing demand for the former made it advisable to develop the one product only, and this has proved a most successful proposition, since the entire output is easily sold, and at prices that net a good return on the investment—the usual result when cost-reduction in manufacture is coupled with scientific salesmanship.

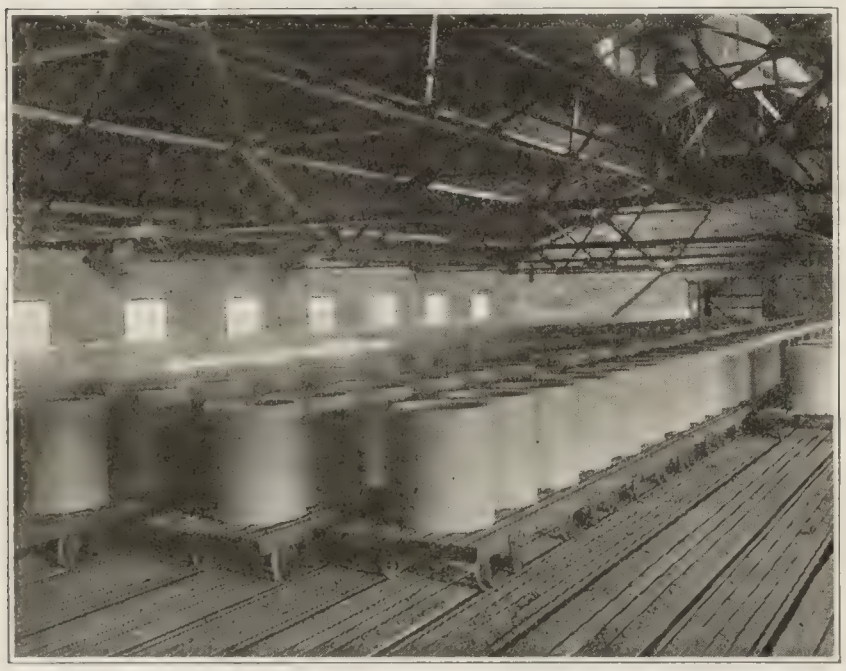


Figure 4

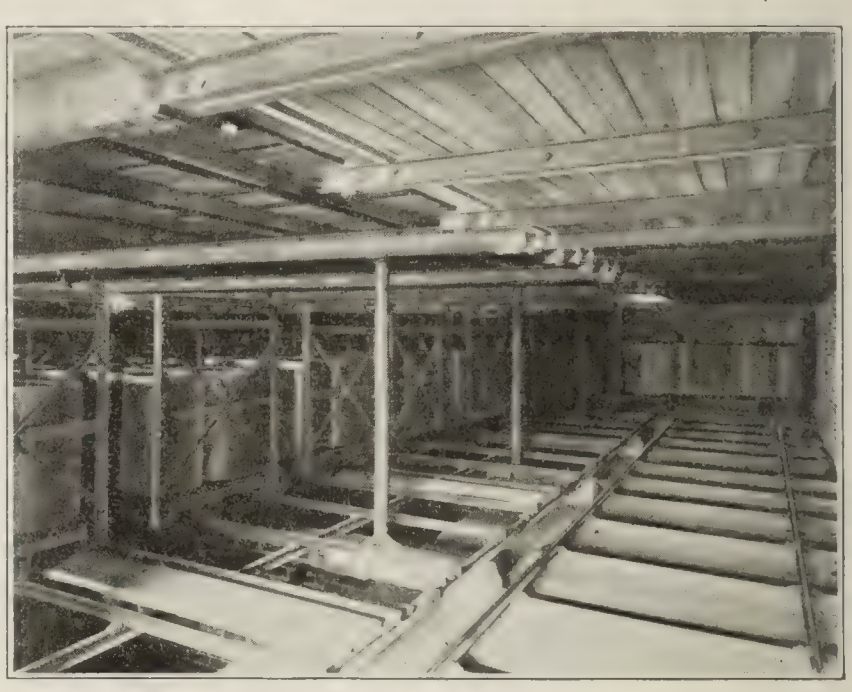


Figure 5

"Short Paying" Letters

One of the practices of American business firms most irritating to foreign merchants is that of "short paying" letters and other mail matter. This habit of stamping such matter at domestic rates causes feeling abroad detrimental to American trade out of all proportion to the few cents involved. Emphatic protests against this practice have been sent again and again by American consular officials. The first step to remedy this condition was taken by the government on April 17 when it notified postmasters throughout the country to inform, wherever possible, persons putting matter in the mails with insufficient postage, and give them an opportunity to send the proper amount of postage. It is expected that much of this can be done by telephone from the local post office.

The National Chamber has called the attention to it more than once in its bulletins. One large manufacturing concern in Ohio makes a constructive suggestion. It is that the post office return to the sender all insufficiently prepaid mail matter addressed to foreign countries. In case there is no return address given, the suggestion is that the matter be sent to the Dead Letter Office. Further to penalize those responsible for this stupid mistake, some provision might be made—concludes the Chamber's correspondent—for collecting twice the deficiency from the sender of the letter on its return to him, instead of from the innocent party at the other end of the transaction. A few experiences of paying double deficiency will teach the careless American letter writer properly to prepay his mail.—"The Nation's Business."

Indiana County Officials on Inspection Trip

Several county officials of Elkhart, Ind., left recently on an inspection trip of the paving brick plants at Veedersberg and Terre Haute, Ind., and Danville, Ill. The trip was taken with a view of obtaining first hand information regarding the manufacture of that commodity.

Brick and Tile in House Designing

The Passing of the Tinder Box Type of Residence Architecture Follows the Intelligent Use of Burned Clay Products

REAL ECONOMY in home construction is gaining a place in the minds of the country's builders. The introduction of fire-resisting materials, such as burned clay products, has made it possible to build houses which are reasonably cheap in price and artistic in treatment. To quote a statement that is frequently and just as truthfully made, "A house can be built of modern, fire-resisting materials at a cost not very much greater than that required for a frame structure, and the architectural features need not be sacrificed in any way to the desire for permanency."

Burned clay products are made in all forms and shapes and any design can be worked out very easily. Perhaps the most common material for house construction is hollow tile. The cost of this material has decreased in recent years in about the same proportion that the price of lumber has advanced. This is due to the introduction of labor-saving machinery and recent inventions in the art of clayworking. The manufacture of clay products is becoming so great that it is time that the layman should become better acquainted with such materials for building purposes and particularly for small residential work.

WOODEN CONSTRUCTION WASTEFUL

The present-day tendency among people is to build good, substantial houses, which will withstand the ravages of time, as well as be secure against destruction by fire. It is hardly possible to construct wooden houses today which will last as long and prove as serviceable as those the early settlers built. The cost of frame construction is very high and the fire risk is also great. The only solution of the problem is to turn to materials such as clay products, stone and concrete. Stucco houses are a popular type of construction in all cities and towns in this country, and the result is that the designer must find a good method for applying the cement mortar so as to get a perfect wall surface, free from cracks and unequal expansion. Hollow burned clay blocks, if properly scored, are the best material for applying cement plaster on stucco. The tendency is for stucco on frame construction to crack, due to unequal settlement and unequal coefficients of expansion for mortar and wood. As an example of economy, compare the cost of cement mortar applied to tile and wood construction. The difference in favor of applying the material to tile is about 35 per cent. The mortar can be applied directly to the tile and does not have to be put on metal or wood lath.

BURNED CLAY A BETTER INVESTMENT

The statement has been made that a house built of clay products is extremely expensive and not a practical investment. Such is not the case. As an illustration of this fact, compare the cost of a house of frame construction with one of brick or tile, after a period of five years. In the one case there is a large amount of expense, incurred every year in repairing defective timber and repainting, while in the other the building is as good as when originally built, the only cost of upkeep being the painting of woodwork of window and door frames, etc. From the fireproof standpoint alone the house of tile or brick construction is more to be desired than one of frame, and it is hoped that in a short time the insurance companies will see fit to make a reduction in their rates in favor of such construction.

MANY POINTS FAVOR HOLLOW TILE

There are many points in favor of tile houses. For example, the air spaces between the walls of hollow tile deaden sound and minimize vibration. Besides, there is formed a better protection against wind, snow, rain and cold than in wooden walls. In the summer the house is much cooler. In any case, however, in order to get a satisfactory building, the material must be properly made and bonded and the work carried out by first class artisans.

The argument has been made by those who are in favor of frame construction that there is a tendency for buildings of brick and hollow tile to be damp inside, due to condensation of moisture from the air or through the capillary action of the materials themselves. With a hard burned clay product such a thing is practically impossible, and this is proved by many tests. From the standpoint of sanitation such materials are very satisfactory, inasmuch as they form a permanent barrier to the entrance of insects and vermin, as well as rodents. The argument has been made that in houses built of clay products it is very difficult to put the interior finish in place, due to unsatisfactory nailing surfaces. Such a difficulty can be overcome by the introduction of wooden blocks embedded in the tile without any particular amount of inconvenience.

HOLLOW TILE EXTERIOR FINISH

From an artistic standpoint, very interesting houses can be designed with clay products. Today an effort is being made to use hard burned hollow tile without an exterior covering of stucco. Such a surface treatment has been attempted many times in houses in New England, and very satisfactory results have been obtained. The color of the material blends very well with natural surroundings and adds a particular charm to the landscape. At first, however, one has to get used to the idea of the large tile in comparison with brick surfaces, but such a treatment is just as effective as one of brick for purposes of design. Very interesting combinations of brick and tile and stucco panels can be made. For example, it is quite a common thing to veneer the first story of the house with brick and to treat the second with half timber construction and stucco panels, the same applied to a hollow tile wall. Other interesting combinations can also be made.

BRICK SUSCEPTIBLE OF ARTISTIC TREATMENT

Brick in itself is one of the materials which offers abundant possibilities for attractive residence construction. At first very little attention was paid to the effect of the width of mortar joints. Today brick are manufactured with all kinds of surfaces, from the smooth faced brick to the very rough surfaced and wire-cut brick. Every pattern offers many possibilities. For example, the brick with a rough surface makes an attractive wall if laid with very wide mortar joints, either raked out or made flush.

If it is desired to make the house more fire resisting a tile roof may be added. Clay tile is manufactured in many patterns as well as colors, and there are many opportunities of adding materially to the appearance of the stucco by having an attractive roof surface.

Clay products as building materials are becoming more popular every day, and it is to be hoped that in the future

more attention will be given to the use of the same in domestic architecture.—The "Iowa Engineer."

Why Some Electric Motors Fail

Every designer of electric machinery allows a liberal margin for the fool factor which enters into every machine that is likely to be used by inexpert mechanics, but it seems as though it were impossible to make this factor anywhere nearly large enough in the case of electric motors. Here are two typical cases that came under the observation of the author during the past summer.

The first was the case of a ten horse-power, three-phase induction motor which furnished the power for a stonecrusher and conveyor. The repairmen who had been called to remedy a breakdown in the motor reported to the foreman of the shop that they could not find the ——d thing in the place which had been indicated. "Oh, there's a little dirt on top of it; if that's what you mean," they were told. The little dirt proved to be a single thickness of tar paper and two full wagonloads of crushed rock, a liberal quantity of which was also discovered in the motor. The motor had been running ten hours a day for two months and had not been oiled in that time. It was also discovered that the foreman had short-circuited the starting compensator "because it was too much trouble to use the thingumabob" and was starting the motor directly across the line. Blown fuses had been replaced with heavy copper wire. The company had previously threatened to sue the makers for delivery of a machine defective in material and workmanship!

The other case was that of a direct-current motor which the purchaser had connected up himself. The results surpassed the fondest expectations of the amateur electrician. The motor, which was a 110-volt series machine of three horse-power, was connected to 220-volt lighting circuit. The belt was placed on the pulley, but the motor was not fastened down. When the current was turned on, the motor gave a complaining rumble and then commenced to give a first-class imitation of a flying machine. The belt became tangled about the pulley and the motor soared upward till it tore the lead wires, the resulting arc causing a small fire. The power for this man's little basement shop is now furnished by a water-motor. He says "Electricity is too risky."

Perhaps I am wrong in calling these cases typical. It is true that they are rather extreme examples of abuse, but the tendency which they illustrate is also extremely common.—The "Wisconsin Engineer."

Obtaining Better Work in Wall Tile

The steady advance in artistic qualities that has marked the manufacture and use of tile has been lacking in one essential—a means of bringing the improvements to the attention of architects. Designers of interior work, from the bathroom in the small residence or apartment to the complete covering of the walls of corridors and special rooms in hotels, have a way of adopting materials and means of using them, to more or less ordinary examples. The concerns that figure on the work follow the plans and specifications as they find them, seldom being given an opportunity of suggesting a treatment that would reflect the development of the industry.

Architects would do well to call some good tile man into consultation before writing these specifications. The knowledge that the tile man gains from daily contact with the product of many factories, makes him a source of knowledge that the architect cannot wisely ignore.

Just as it was necessary for the brick manufacturer to inaugurate a designing department, in order to "visualize" the possibilities of his product before architects could be convinced of the possibilities of artistic brickwork for interior decoration, so is it advisable for tile men to maintain architectural departments, whereby architects may be led to see the chances for permanent and exceptionally beautiful effects in this highly specialized branch of the clayworking industry.

The Principles of Ceramic Engineering

In addition to its regular instructional work, the Department of Ceramic Engineering at Iowa State College attempts to serve the interests of the state by giving a certain amount of technical advice to firms operating plants, by testing clays, and by conducting researches in the field of ceramic engineering. In these lines, it works in conjunction with the Ceramic Engineer of the Engineering Experiment Station of the college.

In pursuance of the policy of helping to make the ceramic industries already established more efficient, the department is now preparing for publication a bulletin on the principles of ceramic engineering applicable to the manufacture of crude clay products. This publication will deal with all phases of the manufacture of such materials as brick, drain tile and sewer pipe, from the testing of the clay to the final burning of the ware. Special emphasis is laid on the problems of manufacture peculiar to the various types of clays found in Iowa. The bulletin will be written in non-technical language, and it is hoped that it will serve as a practical handbook to those engaged in these industries. When it is realized that there exists no really good modern work dealing with the manufacture of crude clay products by American methods, the usefulness of such a publication is obvious. The authors of this treatise are Homer F. Staley and M. F. Beecher.

A second bulletin is now in the hands of the printer. This embodies the results of an extensive and careful study of the fire clays of Iowa, by M. F. Beecher. This investigation has proven that there are very few fire clays in Iowa of suitable quality for making high-grade refractories. On the other hand, it has shown that many of the fire clays would serve as excellent raw material for the manufacture of such products as paving brick, sewer pipe, fireproofing and terra-cotta. The practical effect of this bulletin will be to discourage attempts to utilize this class of clay in making wares for which it is poorly adapted and to promote its use in classes of ware for which it is eminently fitted and for which there is a large and ever increasing demand.

TO PREVENT SCUM ON CLAY WARE

A third bulletin, to be issued shortly, will give the results of two investigations by Homer F. Staley. The first establishes the fact that barium fluoride can be used instead of barium carbonate for preventing soluble salts being carried to the surface of clay wares during drying and being deposited there as an unsightly scum. The fluoride of barium not only proves more effective for this work than the other chemicals that have been proposed, but being a by-product, is much more economical.

The other investigation deals with the effect of salts on the drying behavior of certain Iowa clays that cannot be used successfully for the manufacture of clay products, because they crack badly in drying.

It is the aim of the department to apply itself particularly to Iowa problems, and to that end is at present engaged in outlining work to be taken up during the next year, which has a direct bearing on Iowa conditions.

Buying Face Brick

In Which a Woman Tells How She Was Transformed from a "Prospect" into a "Signed Order"

By Louine Worden

ARTICLES DEALING WITH THE SALE of face-brick are common. In them, the writers show the most effective way of approaching the buyer and of making a quick and profitable sale. Here, for the first time, is the other side of the medal. The writer of this article, in a series of letters to a friend—the wife of a brick manufacturer—tells of the impressions she received, while listening to the "sales talks" of face-brick salesmen.

(Continued from May 20 Issue.)

THE SUGGESTION that I see some homes built of different brick, had absolutely stopped any thought I might have had of making my selection that day, as the afternoon was almost gone, and the particular residences which they thought I should see, were quite some distance from the office. I was informed that the firm owned a car and we could get around quite easily. I felt as though, if I had been a child they would have expected me to jump up and down and sing, "Oh, mamma, we are going to have an auto ride." Instead I was simply dying to whisper to the architect the question, "Horrors! is it a * * * *?" You know I am not so terribly proud, but if I must ride in one I prefer to pay my nickel and use the "Jitney." That idea is at least new. Important as the question was, I proceeded immediately to forget all about it.

Mr. Architect suggested we take another day and start early in the morning. I was quite resigned to the fact by that time, that I must spend days, weeks—perhaps months—dashing up one street and down another in mad search for just what I wanted.

Selecting brick now seemed a huge task instead of a joke. And the architect who was willing and even anxious to tell me what to use in other instances, simply stood back like a wise old owl and let me be my own judge.

I'll admit those men turned my head a little—but looking back now I think they might have been trying to put all the responsibility on my shoulders instead of flattering me. Needless to say, I was having the time of my life.

I was about to slip on my gloves, when a horrible thought crossed my mind. In all my talk with those men, none of us had mentioned "price." I had almost missed an opportunity—for I simply adore shopping. I put my gloves back into my bag and really felt like taking off my hat. I was sure I had to start all over.

With this thought in mind, I stopped, just as the elevator door opened, with my perfectly good architect perched to one side, directing me into the car. I hesitated, stepped back, and insisted that we must return to the brick office.

I suppose that my fellow seeker after "effects" in brickwork thought I had changed my mind, and was prepared to settle on one brick or another, without further delay, for he followed me, smilingly.

We re-entered the show-room, and found the salesman at his desk. He rose expectantly, and, as I mentioned the magic word "price," gave me one of his very best smiles, following this by asking the architect—not me—what price brick he was thinking of using.

Away back in my head, somewhere, there is a story of a man I knew, who bought Oriental rugs on shipboard, the rug merchants bringing their wares to the steamer in picturesque little half-sail half-oar craft. He said that the opening sentences of each negotiation were the same—he asked how much this or that shimmering beauty was and the wily Turk or Armenian, or other heathen invariably asked how much he wanted to pay. Evidently there is a touch of the Orient, in face-brick.

The gentle architect, however, saw nothing wrong in the question, for he answered that he thought I would prefer something that was cheap! I was furious. I wanted to say something hateful, but couldn't think what it was I wanted to say. Why must I have cheap brick? I certainly didn't want my house to have a cheap look.

I admit I was fussed, and I guess I repeated several times, that my house must not *look* cheap. But come to find out the difference in price between some cheap brick and others that the salesman (whom I



"I Prefer to Pay My Nickel and Ride in a 'Jitney'."

did not like at that minute) treated with much respect—was about five dollars a thousand and my house would take about thirty thousand. It really was a question then, of $150 difference and it was to affect the entire outside appearance of my home, except the roof and general outlines.

Then the eternal "why" came up. Why did Brick "A" cost more than Brick "B?"

What do you suppose was the reason? *The freight was higher!* Why I almost screamed. What difference did it make to me, whether the brick came from Ohio, or New York, or Denver, Colorado? I wondered, for a moment, if this man was making fun of me, and looked, searchingly, at my architect. But he seemed in earnest—evidently the amount of freight that somebody had to pay on that brick made it cost more and, if I gathered the salesman's meaning correctly *it was worth more because it cost more.*

Now you know, my dear, I couldn't see that, at all? So I asked him point-blank, which brick was *best.* And what do you think he said? He told me that really none of them was "best"—that they were all good—all "hard burned," I think he said—and that it was really a matter of choice.

Did you ever hear of such thing in your life? I was supposed to choose the one I liked best, and then pay a price that was based upon something entirely aside from its "worth"—that is, the price was high, or low, in proportion to where the brick was made. If I chose from a price standpoint alone, I would not be getting any special value for my money—it would simply be a case of being lucky or unlucky.

And there the matter stood. Did you ever hear of anything so exasperating? Time and again, I have bought things because they were high in price, believing that there must be value behind the price, or a reputable merchant would not charge so much. Not anything like that, evidently, in the face-brick business.

Seeing my utter dismay, the salesman did try to tell me that there was some difference, but I must have been stupid, for I did not get a real notion of what he was trying to tell me. Eventually he came right back to where we started—"the freight." The architect saw I was getting befuddled and said there was a difference here and there on account of the "finish." But he was worse than the salesman, for he went on to say that he preferred a brick of rough and rugged appearance on account of the effect and pointed to one of the very cheapest bricks on show. This certainly must be a problem too great for a weak feminine mind. Anyway I was muddled and I wanted to go home. I fairly grabbed my gloves and made a mad dash out of the office before they could pump any more ideas in or out of my addled brain.

I thought I could forget when I got away from that office, but no such luck. On the train going home, I had visions of that smug salesman and satisfied architect who seemed to take the price as a matter of course.

But I was surely confused. I could see the salesman quoting four or five varying prices on as many brick, one "just as good" as the other. Neither man would commit himself as to which might give a better effect.

I recalled that at the last the salesman had said that the cheaper brick "gives me the advantage of a low freight." That sounds as though I might get the best stuff at less price. But my friend the salesman evidently seemed to think the lower priced materials were normal and to feel he must apologize for the higher prices on those that cost more, giving as an excuse that they came from afar.



"Two Days Later, Enters the Villian"

That foxy salesman had thought he could "fix" me by telling me that they sold more of the higher priced brick for fine residence work than any others they were showing. Of course, that was pure Blarney. My modest home in the fine residence class! I wanted to be frivolous and say "Please pass the salt"—but with great difficulty I refrained.

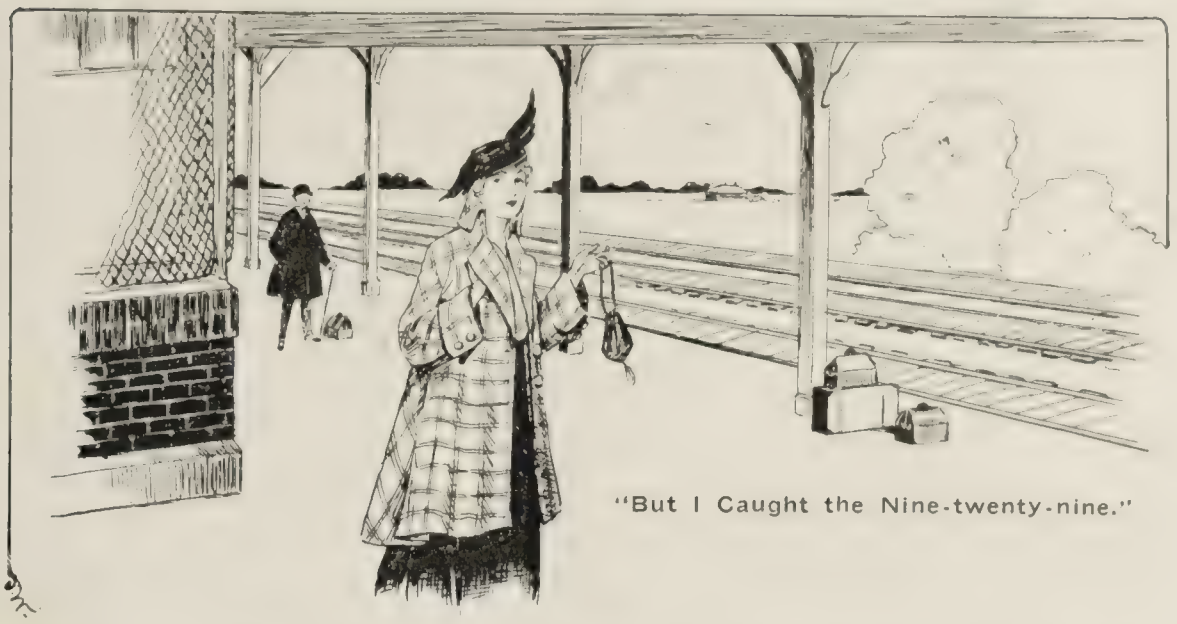
Why should brick be so much harder to buy than anything else? You know yourself—you fastidious thing—that when you go into a silk shop you look at the texture and color, you see if the finish is dull or bright and if one material harmonizes with others. You pretend to be horrified when the dapper salesman says the price is $5 a yard instead of the $2.50 you ought to pay.

When you ask him why one costs so much more than another, he has a very good answer ready for you. You have either selected a very exclusive shade or it is a novelty of which there are comparatively few yards and simply could never become "common." Perhaps he tells you it is exceptionally wide silk or that the thread in it is not tinsel but real metal. In that case beware! Don't ask the price. If you do, take a good grip on the sides of your chair. He will have the nerve to say twenty or twenty-five dollars a yard and wait, nonchalantly, until you get a fresh breath.

But back to thoughts of my brick man. My figuring showed me I was about to spend about $600.00 for materials, yet he could not tell me why he wanted me to pay more for one kind than for another. It was evidently a case of enie, menie, miney, moe. I went to bed dreaming of the bricks and the funny part was that the gold and silver threads from my silk was made into bricks. I had heard of gold bricks.

Two days later, enters the villian. Don't get scared. No

burglar, but another smiling, round and rosy, sauve young man. His card told me he was the representative of a rival brick concern, and just to show you what a horrible villian he was, he somehow, without even hinting it, conveyed to my mind that my architect, who according to my notion is a little tin god, "favored" the brick concern we had visited a few days before.



"But I Caught the Nine-twenty-nine."

Speaking for his own concern, he explained that they had some very fine new effects in brick which he thought would please me immensely and said that it really might give me some new ideas if I were to consider these before I made up my mind. My dear, a tramp with a brick in his hand would almost be received with open arms. And of course I fell for the smooth talk of this businesslike youth. Again I was launched on a "brick shopping jag."

Even though I had not learned what kind of a car the first salesman drove, I had some qualms of conscience about riding around in it with a mental reservation to see some other man's bricks before I decided on what to buy, so I made up my mind to call at No. 2's office before I stepped into No. 1's car—be it ever so humble.

My appointment with No. 1 was for near noon the following day, but I caught the nine-twenty-nine, and bright and early, I was in town, making tracks for No. 2's office, and destined to spend an hour or more with him before I saw No. 1. I was divided between thinking I was doing what a smart business woman would do—and feeling I might be doing something that my architect might—*at best*, think was a waste of time. Anyway, a little more information could not hurt me and, besides, I was enjoying myself hugely. Was there any better reason for going on?

(To be continued.)

Clay Products at the San Francisco Exposition

The ceramic department of the College of Mining Engineering of the University of North Dakota has issued a circular inviting every one who attends the Panama-Pacific International Exposition to visit the North Dakota state building, where there is a widely varied display of clay products that are made in the ceramic department of the university mentioned.

The object of the display, as stated in the invitation, is to call attention of capitalists to the comparatively undeveloped clay resources of North Dakota, and for this purpose brick, hollow building tile, drain tile, sewer pipe and pottery manufactured from North Dakota clays are being shown.

This is an exhibit which is well worth the attention of clayworkers who will attend the exposition, coming from many states where clayworking has been developed to a degree that has made competition very keen; North Dakota, it would seem, offers a field for profitable investment.

In addition to this exhibit one will be found in the northeast corner of the Mines building, where the state of Missouri makes a very fine display. In this will be found roofing tile, made by the Mound City Roofing Tile Company, which also has arranged stock tile in the form of the American flag, measuring approximately 8 by 14 feet. This is mounted something like 35 feet from the floor.

The pole or staff which carries this flag is made up of sewer pipe manufactured by the Blackmer & Post Pipe Company and by the Evans and Howard Company, the large tile resting on the floor and the small tile reaching up to the top of the flag.

The Laclede Christy Clay Products Company, of St. Louis, has put in a complete line of fire clay products, which include a large number of special furnace forms. The Hydraulic-Press Brick Company has an attractive exhibit of its various face-brick, in both smooth and rough textures, while the Poplar Bluff Brick Company and the Deerfield Brick Company show good exhibits of their standard red brick. The Fulton Fire Brick Company also has an attractive and interesting line of refractories.

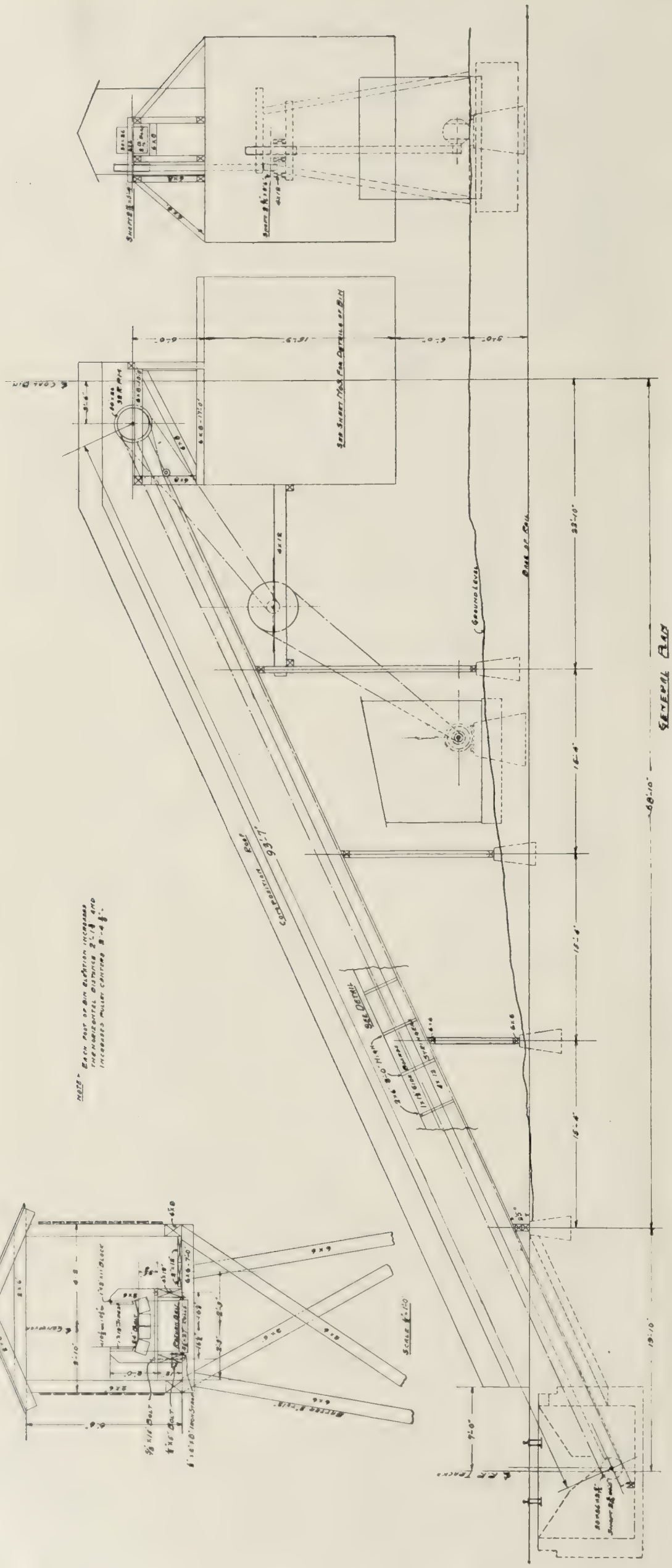
The terra-cotta industry of St. Louis is represented by a series of ornamental plaques, window boxes and mantel forms, and altogether Missouri clays are presented to the millions of visitors in forms that are certain to give renewed activity to the plants that are operating in the "show me" state.

Brick Plant Appraisals

During the early part of the present year "Brick and Clay Record" published a series of articles on "The Fire Insurance Contract," in which brick plant appraisals were advocated as being one of the surest ways of recovering the amount of loss which might be sustained by fire, and suggesting that proper attention be paid to the provisions of the insurance policy.

We are glad to know that a number of brick plants have made arrangements for services of this kind, among them being the Barkwill Brick Company, the Farr Brick Company, and the Deckman-Duty Brick Company, of Cleveland, Ohio; the Big Four Clay Company, the Belden Brick Company, and the Canton Pressed Brick Company, of Canton, Ohio; the Hay-Walker Brick Company, of Pittsburgh, and the Western Brick Company, of Danville, Ill.

What these concerns have found to be a necessity is just as much needed in a host of other brick plants.



A Home Made Coal Unloader

Economy and Ease of Operation Commend This Device

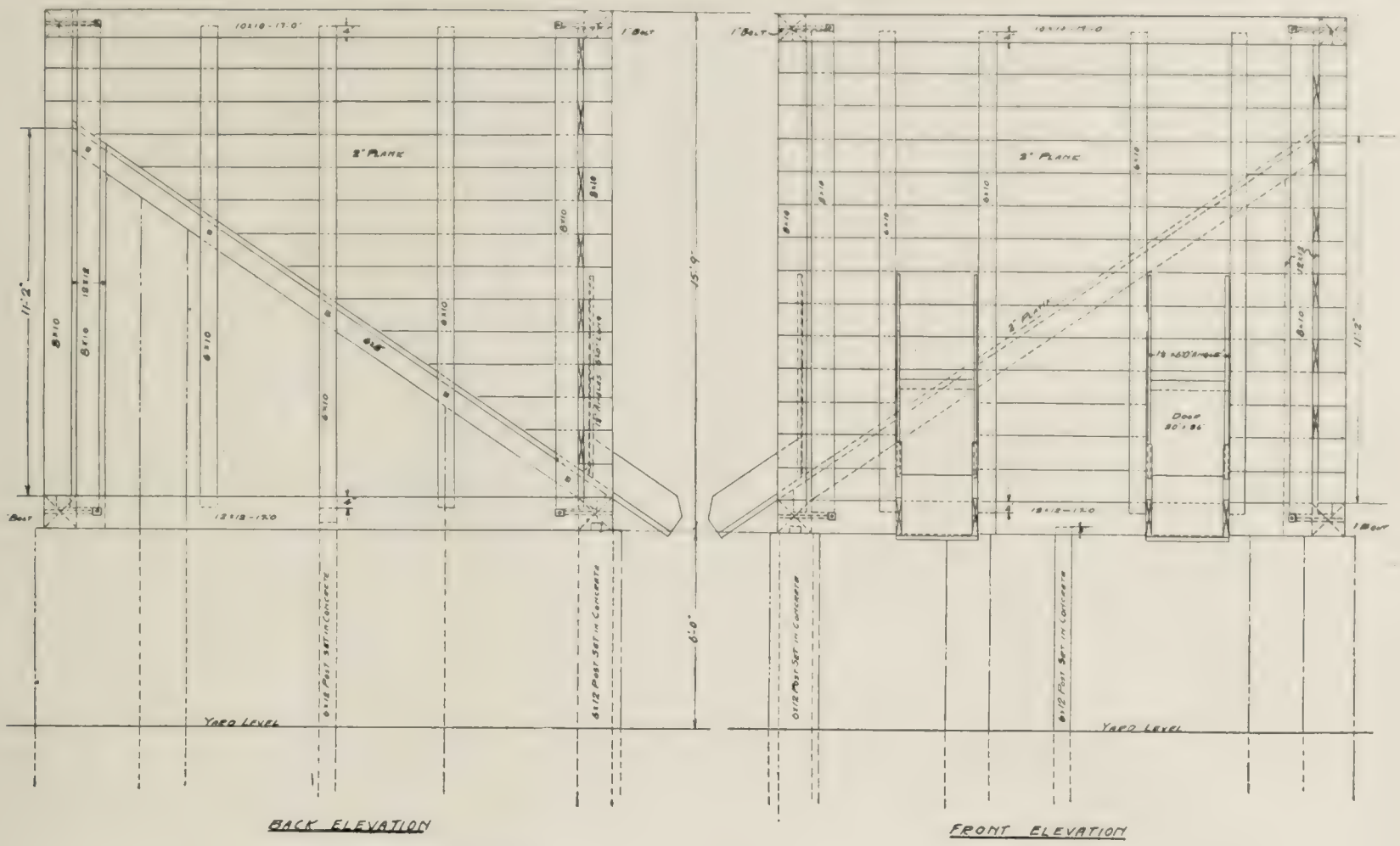
WHERE COAL IS USED to burn clay ware—and this includes more than 90 per cent of the clay-working plants in the country—it constitutes one of the greatest items that enter into the expense of manufacture. This applies not only to the mine cost of the coal per thousand brick or equivalent, and the added freight, but to the cost of handling after the coal has been delivered at its destination—which is inside of the clayworking plant.

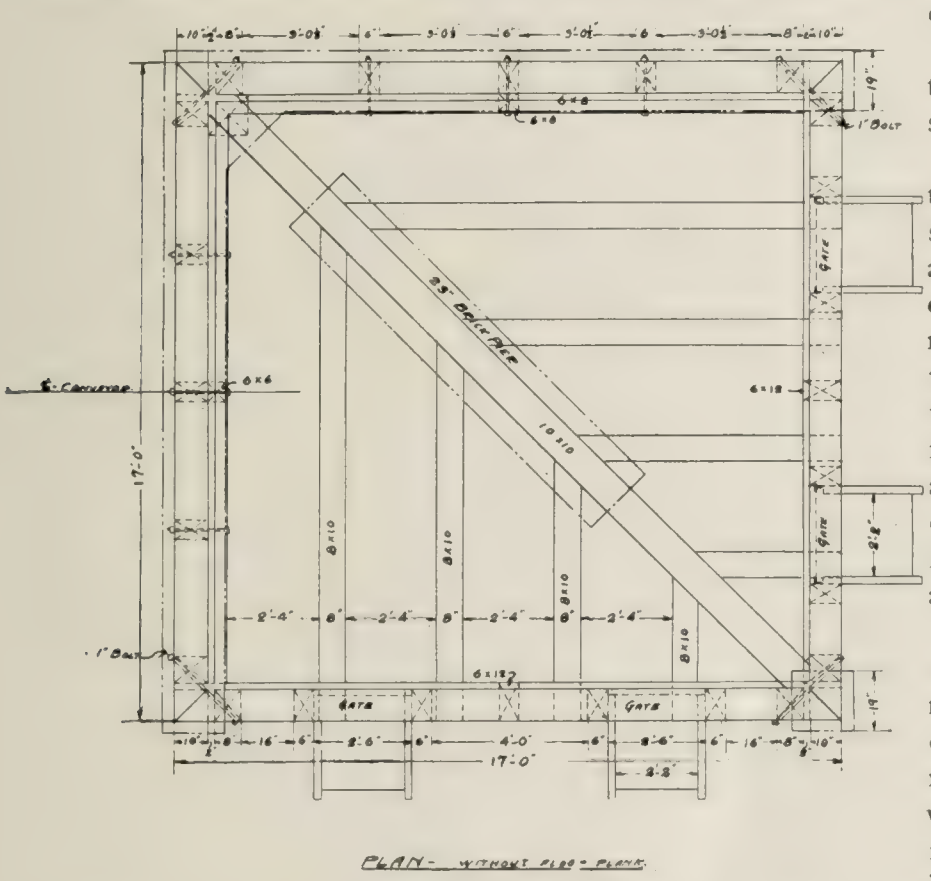
Where no special provision was made for its reception save a special siding, hopper cars cannot be used advantageously. When the railroad insists upon making delivery in this type of car it means an added expense to the clay-working plant.

Look over your expense items and, if you keep an accurate count of what every phase of your manufacturing costs you, you will find a very considerable item under the head of "unloading coal." The expense of unloading coal from the gondola—whether the coal be pitched from the car into a cart or onto a pile beside the siding, is estimated at seven cents per ton. In a plant which has twelve to eighteen kilns under fire, this will amount to something like $20.00 a week. To this must be added the demurrage or car service which is inevitable where coal cars are unloaded by hand.

The accompanying diagrams show a coal unloading device which one plant superintendent states will cost between $2,200 and $2,500, varying somewhat according to local conditions and prices. The interest on $2,500 at 6 per cent is $150 a year. The device will save something like $20.00 a week, at least nine months in the year, which would amount to more than $800.

This coal car unloader is simple in design and cost and is very easily built, plant labor frequently being all that is necessary. All of the material excepting the belt used for the conveyor, the motor, the steel eye beams, the pulleys and the shafting, can be secured readily at a local lumber yard. A glance at





the accompanying illustration will show that the unloader consists of a hopper-pocket under the railroad track, where the coal is fed onto an inclined endless conveyor-belt 24 inches wide. This is done by merely dropping the pockets of the standard type of hopper coal cars.

The coal is carried up on this inclined belt and dropped into a bin, which should be large enough to hold about two cars (or 100 tons) of coal. This bin has chutes on the sides, under which the coal carts are placed, and when the gate is drawn the cart will be loaded in a very few seconds.

Right here is the second and perhaps the greatest saving which is effected by this system, namely, the quick loading of the kiln carts, instead of the slow loading method, which is necessary when the coal is taken from the coal pile beside the coal track. It is estimated that here alone on a sixteen kiln plant the saving will be sufficient to pay for an unloader in a single year.

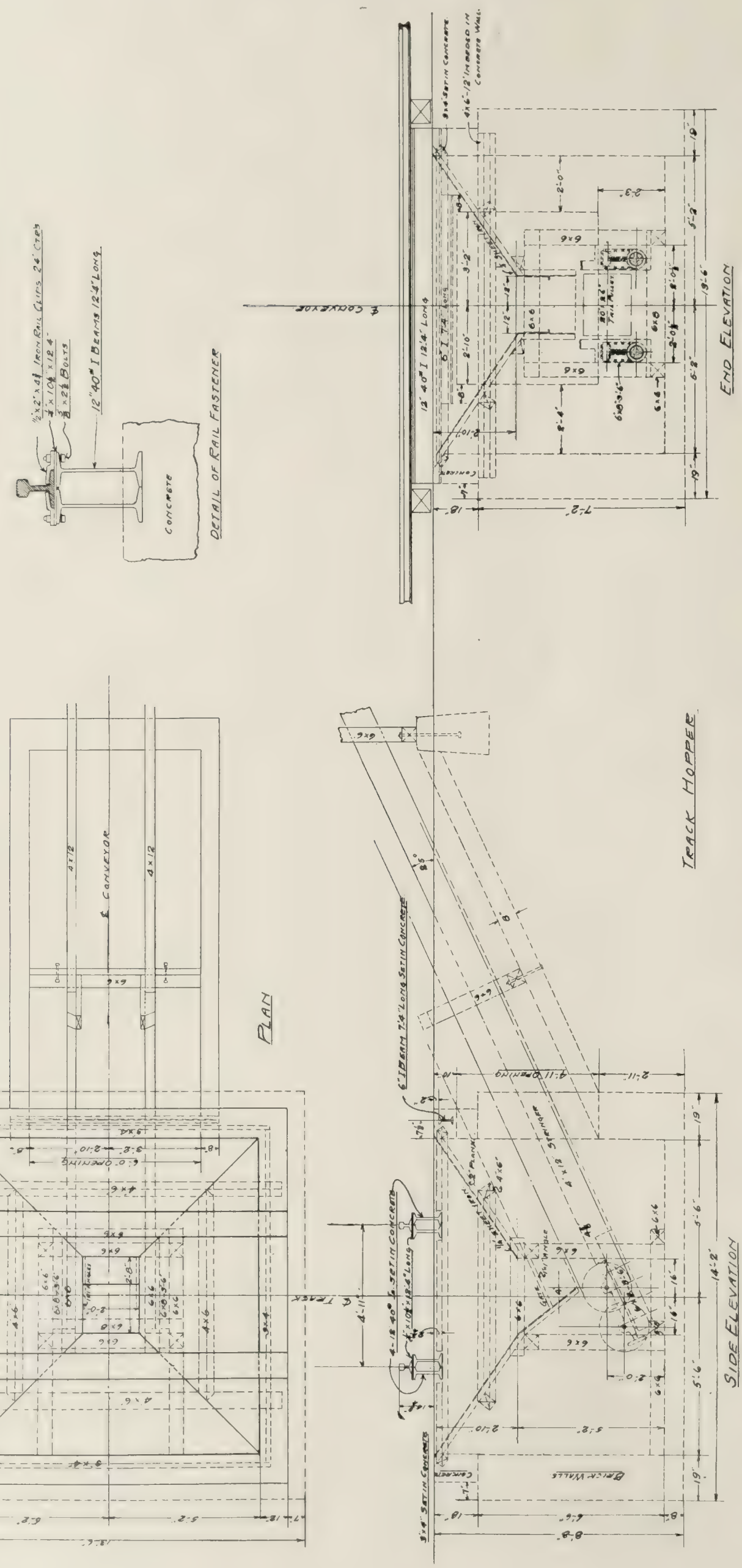
The unloader will handle a 45-ton car of the self-clearing type in about three-quarters of an hour. This should insure a yard against any possible demurrage on coal cars.

A 15 horsepower motor is plenty large enough to handle the work, and the power cost will not be more than five or six dollars per month on a yard that uses between four and five cars of coal per week, in case the power does not cost more than 1½ cents per kilowatt. Either direct current or alternating current motors can be used, according to local conditions or power equipment. By this is meant that many factories which have a direct current generator for lights would, in all probability, be able to carry the additional load of furnishing power for the motor on the coal unloader without the installation of extra equipment. Alternating current motors of the squirrel-cage type are also very efficient for this type of work.

The length of the belt depends on the height of the bin desired, and on the location of the bin. Because of its rugged construction there is little or nothing about this coal unloader and conveyor which makes it apt to need repairs or breakdown, or do many of the other things which brick yard equipment seems liable to. Its operation is simple, no skilled labor is required, the wear and tear is practically nothing.

In addition to this, it provides storage for some sort of a coal supply, and for this reason alone is worthy of some consideration.

The drawings from which the cuts accompanying this article were made, and the descriptive matter upon which the article is based, were furnished by L. B. Rainey, Cr. E., who was in charge of a brick plant at which a conveyor of this kind was built, and his figures are the result of actual observation, rather than theory. In making the deductions that are here published, he has made no allowances for the actual saving in coal—that is, the bringing of the amount of coal actually consumed, closer to the amount that shows on the



bills rendered for the coal.

It is, practically, an impossibility for any clay plant to figure on actually using as much coal as it pays for. No matter how accurately it may measure the coal that it delivered to its boiler room and to the kilns, there will always be a difference between the total amount so delivered and the total amount of your coal bill, which amount will, of a necessity, be verified by the freight bill.

In common with the majority of people who are buying coal, you accept "railroad weight" or "mine weight" and you have grown used to a certain shrinkage in the actual amount delivered, having been told that much of the coal rolls over the side of the car while it is on transit and also—this is a most ingenious fable—the trainmen often throw huge hunks of anthracite (or bituminous, as the case may be) at small boys who have a way of calling trainmen bad names.

There is no intention in this article of discussing the discrepancy of the actual amount of coal received and used at a clayworking plant and the amount for which the plant owner pays, but rather is it our object to call attention to the fact that a very noticeable part of this discrepancy is explained by the amount of coal which is transformed from good sized pieces into smaller ones and from thence into coal dust ground by the hoofs of the horses and the tires on the wheels of the wagons that come to the coal pile to load fuel for the kilns.

The Dividend Payer

In Which a Sure Way to Secure Profit on One of Your Investments is Accurately Described

IN THE EDITORIAL published in the May 18 issue of "Brick and Clay Record" its readers were urged to give it the benefit of their advice, particularly as applying to the character of the articles it was publishing. That editorial read, "The readers of a magazine are more important than the men who prepare its pages. If it is to serve them it must reflect their thoughts. Its function is to follow, rather than to lead." With this thought in mind the pages upon which these words appear in this issue, are written in the hope that you will do your duty as loyal supporters of this magazine and give it the benefit of your experience.

It is manifestly impossible to edit a magazine which covers so wide a field as that which is embraced by the term "clay products" without slighting certain interests. It is just as impossible to satisfy every reader. Even where space is devoted to one particular branch of the industry—space that is out of all proportion to that given to other branches—the intense interest taken in that particular branch by individual readers will cause them to feel that it is not covered as fully, perhaps, as they would cover it were they in charge of the writing rather than being readers only.

The editorial viewpoint of a class or technical journal—the names by which "trade journals" wish to be known—is seldom understood by the readers. The many departments which are devoted to one phase of the business or another are valuable or useless according to the viewpoint of the reader. For instance, a man in charge of sales might see very little to interest him in a page devoted entirely to manufacturing problems and, on the other hand, a superintendent or a burner in a clay products plant would secure but little help from a page devoted entirely to the most up-to-date methods of broadening markets and obtaining better prices.

Readers of class or technical journals have a way of skimming through the pages and giving attention only to those things which directly interest them. Their interest may be gained by the gentle arts of illustration, typography and make-up or by the direct appeal of the solid printed matter to their individual minds. In this way they fail to see the care and thought and work which goes into those pages which deal with some part of the business that does not come directly under their daily observation.

Each and every one of these departments or features is especially designed to meet some distinct want in the business. Comparatively few of them are entirely useless. There is no doubt, however, *but that more space could well be devoted to some things and less to others.*

"Brick and Clay Record" desires to serve all of its readers all of the time and it knows of no way whereby it can do this better than to ask them to help themselves by helping the editorial department of this magazine to give them a more helpful service.

Along the margins of the two pages that follow this are printed coupons in which you are asked to indicate what features of the paper have most appeal for you and what features could be added to the magazine to give it a still greater hold upon your attention.

If a man were to come to you and tell you that you could, by simply stating a wish, give your equipment a greater capacity, or your men greater efficiency, or your management greater economy, *and all without cost to you,* you certainly would take the time to tell him something of your innermost thoughts.

That is what we ask you to do, and in order that these thoughts may be given us in a form that will be convenient for your use and so encourage a response that will be effective in shaping our policy, we have printed the coupons which we have already mentioned, and spread before you the salient points of our editorial work.

THE EDITOR'S CORNER

The pages devoted to this department reflect, first of all, the editorial policy. In practically every other part of the magazine the personality of the contributor may be read between the lines and his prejudices or ideals are expressed. A due censorship is maintained, but for the most part all pages outside of "The Editor's Corner" reflect the thoughts of men who are not directly connected with "Brick and Clay Record's" Staff. In "The Editor's Corner," however, one can, without great difficulty closely tell where this magazine stands on every point which affects the future of clay products.

NEWS ARTICLES AND NEWS NOTES

More than twenty correspondents, with offices in as many cities, contribute to "Brick and Clay Record's" news pages. In addition to this, six press-clipping bureaus forward every item of interest that appears in the newspapers and which mentions any clay product. These press-clipping bureaus are located at widely separated points throughout the country and we are confident that we receive notice of every important occurrence in claycraft which is chronicled in the United States and Canada.

While it is not always possible to verify these newspaper reports, great care is exercised and so far as is possible, no untruthful or misleading statement finds its way into our columns under the guise of "news."

So far as is possible in a magazine which is published only twice a month, "Brick and Clay Record" aims to be a *newspaper.* It brings the news of the industry to the men in the plants and tries to do so in a manner that is readable and interest-compelling.

FEATURE ARTICLES

There are two sources from which articles of this character may be culled. One is the description of places where clay products are made and the other is places where clay products are used. "Brick and Clay Record" confines its written descriptions of plants to such as are out of the ordinary. This means that "plant write-ups" are given only when some particularly interesting equipment is being employed, the description of which will have educational value to other clayworkers. *No attempt is made to "compliment" someone by writing up his plant,* nor to "lug in" a puff for some particular machine or device, by mentioning it, seem-

You Need Not Dictate Nor Write a Letter

Use This Coupon and the One on the Opposite Page to Tell Us

Which of the features now being published in "Brick and Clay Record" have most value and interest to you?

Put down numerals—1, 2, 3, 4, 5 and so on, to indicate which you think is most important and next in importance, down to 12, which will be the one you think least of.

The Editor's Corner

News Articles and News Notes

Feature Articles

Selling Articles

Articles of General Interest

Technical Articles

Questions and Answers

The Letter Box

The Superintendent

Machinery and Equipment

Freight Tariffs

Semi-Monthly Trade Review

Name .....

Address .....

Tear out this Coupon and mail to "Brick and Clay Record."

These Coupons Rep-

You May Not Have Time to Read All That is Written on the Page But You *Have* Time to Read the Coupon and Act on Its Suggestions

PLEASE—DO IT NOW

ingly as a part of the plant description. That sort of thing, in our minds, scents of the dim and dusty past of trade-journalism.

New fields in which burned clay products may be used form, for the most part, the basis for the greater part of our feature articles. Thus it is that the use of burned clay for interiors has been especially featured. Wherever tile or brick is used for decorative purposes one or the other displaces a less permanent form of decoration (such as are given with palette and brush) or a more expensive and less ornamental form, such as polished marble, onyx or granite.

Between these extremes lies a broad vista that is scanned most assiduously for articles that are helpful to one or another phase of the industry. Instances of brick pavement economy and interesting facts in clayworking (such as a recent article on the preparation of kaolin); illustrations of artistic brick work, tile work, roofing tiles and architectural terra cotta are given prominence. These articles are illustrated with half-tones made from photographs, and no expense is spared to secure the very best workmanship, both in photography and engraving. The high quality of the paper used in "Brick and Clay Record" and the care that is taken in its preparation, makes it possible to use half-tones of exceptionally fine screen, and this adds to the attractiveness of the feature articles, which rank, in many instances, with those published in the best national fiction magazines.

SELLING ARTICLES

Prominent among the articles that can be classed as selling articles published during the past year have been the series "Publicity or Free Advertising," by Ralph P. Stoddard, and "Reaching the Farmer," by Edwin G. Zorn. These articles deal with what has been called the "higher salesmanship" (which is advertising) and have been accompanied by various other and shorter articles on price maintenance and direct salesmanship which, we believe, have been of real value to those who have the selling end of the clay products business in their charge.

ARTICLES OF GENERAL INTEREST

If the work of the past year may be taken as an indication of that which will be done during the next twelfthmonth, then many valuable articles of general interest will be offered to the clayworker in the next twenty-four issues of "Brick and Clay Record." One of these—one that created a great deal of favorable comment—was a series on "The Fire Insurance Contract," by John J. Thomas. Another was "Saving Dollars by Using Brick," by Gardner Read and E. Winfield Day and the same authors have just closed a series entitled "Burned Clay vs. Lumber." When to these is added the article "Brick—The Scapegoat of the Edison Fire," the excellence of which earned it "honorable mention" and a page-and-a-half in the "Literary Digest," it may be said that this part of the editorial work of "Brick and Clay Record" is well outlined.

TECHNICAL ARTICLES

Within the past year the custom of running a technical department was discontinued. Instead, articles were contributed by various writers whose names are recognized as authorities in ceramics. The subjects have embraced the manufacture of refractories, the kieselguhr industry, the manufacture of porcelain for electrical purposes, the proper construction of hollow-ware dies, the uses and construction of test kilns and many similar subjects.

QUESTIONS AND ANSWERS

Something in the neighborhood of two hundred questions are publicly answered each year, through this department. Perhaps

resent a Value to You

Every Subscriber Has an Investment in "Brick and Clay Record." You Get Results From That Investment In Proportion to the Help You Give

PLEASE—DO IT NOW

half as many more are answered by mail and, on account of their having interest only for the individual who has requested the information, are not printed.

A wide range of subjects is covered and the answers are given, in every instance, by the best authority which "Brick and Clay Record" can secure, without regard to cost. The publication of these questions and the accompanying answers often acts as a spur to men who hold opinions different from those that have been published and this brings solutions other than the original one. Several letters have been received in which we are told that, through the assistance given them in the columns that are embraced by this department, their writers have been able to effect economies and produce better ware, to their very material financial advantage.

THE LETTER BOX

"Brick and Clay Record" does not waste any space in this valuable department by printing letters that are purely commendatory. Its editorial staff likes to receive communications telling it that it is "the best ever" and that a reader could not "keep house" without the paper, but does not believe that this sort of information has any particular amount of interest for more than two people—the man who writes the letter and the man who receives it.

Possibly because it has refused admission to letters of this character, its readers have been generous enough to write *real* letters giving their reasons for holding certain opinions and stating these opinions very frankly. There is no doubt of the value of this department. It gives a wide publicity to the personal opinions of our readers, and gives us an opportunity of knowing what our readers actually think of the work that is being done. The letters that we are publishing bear every evidence of being written in all sincerity.

THE SUPERINTENDENT

In the pages devoted to the superintendent, "Brick and Clay Record" has published thousands of lines of useful information. Requests reach us intermittently asking that we reproduce this department in book form, calling it "Miscellaneous Information for the Clayworker."

Much of the material that was published during the past year came as a result of a prize offer made during the early part of 1914, through which clayworkers from all parts of the country were induced to send us items that had distinct educational value for their fellows-in-clay.

At present a series of tables is being published which will, when completed, give plant managers a comprehensive, carefully calculated series of tables which will have application to many varying points in connection with clayworking. In order to make this department effective, experts in clayworking read, for us, all journals published in foreign languages, and where anything has especial interest for our readers, it is translated and published in this department.

MACHINERY AND EQUIPMENT

The line which divides a "discovery" in the realm of burned clay and that which describes some comparatively new device or method or machine, is hard to define. Adopting, therefore, the well known and popular "Safety First" slogan we inaugurated, some months since, the "Machinery and Equipment" department, in which machines new and old, devices tried and untried, and methods *which we have every reason to believe are correct in basic principle*, are described.

For the most part, these descriptions are written by the men who are interested in the sale of these particular devices, methods and

This Coupon is Even More Important Than the One On the Opposite Page

In it, we ask you to suggest the subject matter of articles that you would like to see published.

Is there any phase of your business that we are neglecting? If so, what is it?

What errors—of judgment—of policy—of statement—of intention—have you noticed in our pages, editorial or advertising, during the past year?

Do you read the advertising pages carefully and critically?

What would you suggest?

Name . . . . . .

Address . . . . . .

Tear out this Coupon and mail to "Brick and Clay Record."

machines *and the "write-up" is supplementary to the statements made in the display advertisements that appear in other pages.* The putting of these "inspired write-ups," in one department is, in our opinion and in that of the majority of our advertisers, the only proper way of dealing with what has been an awkward problem in the conduct of a class, technical or trade journal.

It was not so long ago that newspapers began to refuse the printing of articles which, beginning with some very interesting story of a shipwreck or such, ended with the fact that a certain man in some small town was cured of something hitherto incurable by the magic application of someone's oil or by the second bottle of someone's "cure." It was found that this sort of advertising did not make friends for the article advertised, but rather left the impression on the reader's mind that if the advertiser could "fool" him in the newspaper, he would "fool" him in the box or bottle.

THE FREIGHT TRAFFIC DEPARTMENT

Very few class journals—and none in the clay field other than "Brick and Clay Record"—publish the changes in freight rates, as they are scheduled by the various carriers. Our readers, if they follow this department, know whether an advance or a reduction has been made in the freight rates from their shipping points and can use these rates in making estimates. They are also enabled by the same department to know what is being done in connection with the rates that affect competitor's shipments and in this way they can make their "delivered selling price" *actually competitive.* In other words, the plant manager who follows "Brick and Clay Record's" freight traffic changes is so fixed that he cannot lose any business on account of being in the dark regarding freight changes.

In addition to this, "Brick and Clay Record" maintains an advisory department in connection with freights, and at the present time it has several cases before the Interstate Commerce Commission on behalf of various readers. In nearly every instance these cases are brought for the purpose of securing reparation for overcharges and a reduction of freight rates that are claimed to be prohibitive and in many cases confiscatory.

Through this department all questions relative to freight matters are answered without charge and special investigations are also made. Freight bills are audited and other services given which would mean the expenditure of large sums of money if the cases were taken to any other source of information.

By publishing (and this is also exclusive) the docket of the Interstate Commerce Commission, we encourage our readers to make claims when they have grievances; we know that, in this way, a great many of the overcharges which have previously been made on shipments of the rougher clay products will not only be refunded, but new rates will be made that will save the industry thousands of dollars.

THE SEMI-MONTHLY TRADE REVIEW

This department keeps the clay industry in touch with the causes that govern and control its immediate future. Published every fortnight it is very close to the event which has just taken place, as well as within fair prognosticating distance of what will happen. "Brick and Clay Record" is the only magazine that gives this service to the clayworker, who must, in using other mediums, select for himself what he thinks affects his individual business. In "Brick and Clay Record" he finds this information segregated, epitomized—made ready for his instant and easy reading.

WHAT WE WANT YOU TO DO

In one of the coupons—the one that appears to the left of the two pages that precede this—we have repeated the paragraph headings that are published in this finer print. We have tried to describe in these columns something of the work which is done and the object of that work, in connection with each department. Having read that and thought the matter over, will you give us the benefit of your experience—and by this we mean your experience with "Brick and Clay Record"—by putting down the "importance numerals" opposite each department? That is—if you find, for instance, the superintendents' department most valuable, give it "No. 1" and the others that are important, but in a less intense ratio, two, three, four, five, six and so on.

The other coupon—the one on the right hand page immediately preceding this—will, if you take the trouble to fill it out, and mail it to us, have a great effect upon the future policy of this magazine. It gives you a chance to tell us, without any great effort in the way of writing a letter, just where you think we are falling short of doing the right thing *by you.* It will also tell us where you think we have allowed anything to appear in these pages that did not come up to your idea of the exact truth.

You will make "Brick and Clay Record" a better paper if you will do your part—now. We will do the rest, largely on your suggestions.

Engineering Chief Recommends Brick Paving

When a petition was circulated recently among the residents of College View, Neb., calling upon the local board of trustees to specify brick as the material to be used in paving Sheridan boulevard from College View to Lincoln, Neb., T. E. Calvert, chief engineer of the Chicago, Burlington & Quincy Railroad Company, affixed his signature with a very willing hand. Mr. Calvert owns a beautiful residence located near College View and facing on the street which it is proposed to pave. The fact that he signed the above mentioned petition created considerable interest, so much so that his neighbors asked him why he preferred brick to other types of paving. Mr. Calvert, whose knowledge and experience is considered of great value along this line, was induced to give such information as was at his command for the benefit of the community. In a letter to the chairman of the board, he says, in part:

"While the brick paving we now have in Lincoln is generally in bad shape, little of it was laid with the class of materials now available, nor was it cared for as it should have been.

"Brick were of inferior quality, laid on improper foundations, trenches have been dug for pipes and improperly backfilled, so that much of the brick paving is very uneven and does not give a good impression.

"South street shows what can be done with good materials properly handled, but is probably of heavier construction than will be needed on Sheridan boulevard.

"Asphalt wearing surface, while noiseless, has not been entirely satisfactory as to lasting qualities in our Nebraska climate. If made hard enough to stand up under the traffic of our July and August weather, it shrinks and cracks in the cold weather, chips into cuts and soon needs repairs, as we can see on asphalt paved streets of Lincoln today.

"South street brick paving, I am told, cost about $2,39 per square yard The 6x20 concrete curb cost 54 cents

(*Continued on page* 1082.)

Questions and Answers

Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Discolored Heads on Gray Dry-Pressed Brick

671. *Texas—We manufacture a dry-pressed gray brick, made of fire-clay with manganese in it, and burn it in round down-draft kilns, the brick being set five-over-two. We water-smoke with wood and finish with oil. We have trouble in getting the heads of the brick the same color as the face, the heads being appreciably darker.*

We have calculated the amount of water in the green brick to be one-and-a-half pounds. This conclusion was reached by weighing a brick that had been burned, and comparing this weight with the weight of a green brick.

The brick are taken direct from the dry-press to the kiln, which is set thirty high. It takes about four days to fill the kiln, when the water-smoking is begun. This takes eight days; we then burn off with oil, which takes four to five days more.

In cooling, we cut off the burners and let the eyes stand about thirty minutes; in the meantime, we take the brick off the center hole and off the holes down near the base of the crown, and drop the damper in the main tunnel leading to the stack.

After about thirty minutes has elapsed, we daub the brick in the fire-boxes with mud. In about twenty-four hours, we knock a small hole in the brick in the fire-boxes, and lift the damper about two or three inches. After this, we gradually open the fire-boxes and, about the third day, we begin to break the door a little. At the end of seven days, the kiln is cooled sufficiently to work in.

We burn to cone 7 (Orton) sixteen courses from the top and to cone 5 two courses from the bottom.

We use imported manganese, which is spread over the clay at the dry-pan while the clay is still in lumps. The manganese is in powder form. We use about fifty pounds of manganese per M. brick.

We are sending you three samples; the piece marked 1 was drawn from the kiln as a trial piece while the kiln was at a high degree of heat, and this sample appears to be the same color all over. We did not cover this piece up to keep the air from it, but left it out, in the open.

Sample marked 2, as you will notice, is clouded on both beds and heads, which are not at all like the face of the brick. This is the discoloration that we want to overcome, as we want the faces, the beds and the heads to be alike.

Sample marked 3 is a part of a brick that was leaked on through the kiln, during a rain that occurred while the kiln was water-smoking. You will note that where the water streamed down upon it, the color of the bed of the brick is the same as the color of the face. We thought that, by sending you this sample also, it might help you to reach a conclusion as to our trouble.

But we will also state, for your information, that this is the third kiln that has given us this trouble (the clouded effect on beds and heads) and we do not want you to be confused into thinking that it is due, in any way, to excessive rain. We want to assure you that we will appreciate any help you can give us in this matter, and wish you the best of success.

The discoloration shown on the samples submitted is a scum, developed in the firing, but formed during the drying or water-smoking period, or during the interval immediately after watersmoking.

Water-smoking too fast, or two slowly, will develop scum. Heating too fast during this period causes a rapid motion of molecules of water toward the outside of the brick, bringing and depositing the salts that are in the clay, onto the surfaces of the brick, as the water evaporates. It also generates so much steam that the draft and flues are unable to take care of it. This causes a surplus condensation on the exposed surfaces of the brick and so additional chances for concentration of salts on those surfaces.

When the water-smoking is too slow the same results are accomplished. Steam is generated in the top of the kiln and as no appreciable draft has been attained, the steam lingers among the bottom brick, condensing, and increasing the chances for scumming.

Incomplete water-smoking, followed by a too rapid raising of the heat results in the quick expulsion of steam, with the same results as are noted above as consequent upon a too rapid watersmoking.

Acting on the assumption that your trouble is caused by one of the foregoing (and this assumption is strengthened by the water content of your green brick), we suggest that you try a remedy that was successful on another plant which made gray dry-pressed brick. This was the partial drying of the brick, in the open air, for forty-eight hours before the brick were put into the kiln. The water-smoking period was reduced accordingly, as a much smaller amount of moisture was brought into the kiln when the brick were set. Of course, this method has one serious drawback; with some clays (and we know of cases where this has occurred), air-drying causes air-slaking, or partial disintegration, due to the releasing of the confined pressure that is given the clay particles in the press. The cohesion of the finely ground clay is overcome, at times, by its plasticity and when too great a period of time elapses between the time of the pressure being given the clay in the press, and the molecular changes that occur during the water-smoking and burning periods, this cohesion is lessened. This does not occur to the same extent with every clay, and yours may, or may not stand the experiment.

Gets Blue Glaze on Stoneware

657. *California—We enclose two small samples of stoneware "try-pieces." These are both fired on top and one of them was drawn immediately as we stopped firing. The other was drawn after the kiln had cooled. We find that the finished ware looks like the blue "try-piece." The kiln is down-draft, with a stack in the center; we have fired it several times and have found in each instance that after we stopped firing*

the glaze on the ware turned blue. We believe that this is caused in the cooling of the kiln, as the "try-piece" that was drawn at the time we stopped firing is perfectly white while the one that was drawn after the kiln had cooled has the dull blue finish.

In cooling we closed the damper in the stack immediately after firing and opened all of the holes in the top of the kiln; about thirty minutes later we closed up the fire boxes. We have also tried leaving the fire boxes open for three hours or until they had turned black but on each occasion we closed the damper in the stack at the time the firing stopped. It might be well to call your attention to the fact that our firing is done with crude oil. If you will give us your opinion in regard to the reason why this ware turns blue after firing, we would appreciate your advice and assistance.

Every indication points to a peculiar condition in this kiln—it is that it contains a reducing atmosphere after the firing is finished. What fault in construction causes this condition is impossible to even suggest without personal observation. The "try-pieces" together with the explanation given in the question are indications of the condition mentioned. In order to cure that condition further experiments will have to be made which will tend to make a complete change in the kiln atmosphere when the firing is completed.

It may be that the glaze absorbs iron from the surface of the body or that the glaze contains iron in ferric state and that this is reduced slightly during cooling. The question and the answer herein given, together with the "try-pieces" have all been submitted to Professor Stull of the University of Illinois.

Wants Clay Mixture for Insulators

656. *Michigan.—I am seeking a clay body to make insulators, and also want recipes for glazes. Do any of the books advertised in your "Book Department" give the information I require?*

In answer to the first question, Arthur S. Watts of the Ohio State University says:

"Regarding the matter of a clay body for the manufacture of insulators, would say that the writer has had considerable experience with the manufacture of high tension insulator bodies and probably could provide your reader with a suitable artificial body for such work.

"Information in such matter, however, is not given gratis, as we would thereby be laying ourselves open to criticism by the men who are endeavoring to make a living as ceramic engineers.

"If your reader desires a high tension insulator body consisting of one clay only, would say that I am unable to furnish him anything of that kind, as I know of no such clay."

In regard to recipes for glazes, believe you will find what you want in "Pottery," by George J. Cox, ($1.25) and in "Clay Glazes and Enamels" by Griffin, ($5.00). Why not secure a copy of the first, and see whether it gives you what you need?

Wants to Patent New Type of Kiln

675. *Tennessee—I want to know if there is a down-draft kiln in use, which is fired on one side, the heat travelling directly across the kiln under the floor and up the bag walls on the opposite side, with the draft travelling down, through the floor, to the stacks. I know of a kiln that is something similar to this, but the stacks take the draft up on the side of the kiln, on top of the floor. This kiln, however, has not proved practical. I have invented a kiln on the lines described in the first part of this letter, and would apply for a patent upon it, if I were sure that no kiln had been built like it. I do not want to infringe on anyone's else ideas, and would be glad to know if you know of any similar kiln that is in successful operation.*

The Beaver Clay Manufacturing Company, of New Galilee, Pa., writes as follows:

"We have a down-draft, rectangular kiln that we have had in use for many years, and which is fired on each side, and which had two main side flues, and this works on the down draft principle. We also have a little test kiln which fires from one side, but the principle of this test kiln we do not consider as successful as the principle of the larger kiln, which is fired from both sides. If your correspondent would care to pay us a visit, we would be glad to show him our kilns, for of course, if his ideas are practically the same as those embodied in our kilns, it would be useless for him to secure a patent, inasmuch as the kilns have been so long in use that it is doubtful whether a patent would be issued, and, if it were granted, whether it would hold."

Wants Books on Clayworking

673. *Indiana—I am employed as assistant bookkeeper in a clayworking plant and as I have had very little to do with this kind of work, would appreciate your advising me as to some kind of a book which will cover the production of clay products and in which the whole process is explained.*

We do not know of any book wherein the "whole process" of clayworking is accurately described. Several authors have written on the subject but where their books cover a number of different points in clayworking, they fail to give any very specific information. On the other hand, those who write on one subject have a way of covering that one very thoroughly.

By referring to the list published in the "Book Department" which appears on another page of this magazine, you will see that there are a number of books which treat on various phases of clayworking. These have been selected from a large list of books submitted to us and are, we believe, the best works on the subject published in the English language.

It is more than possible that some of these books will be found in the public library in the city in which you are working and we would suggest your trying to secure them there. If you find that no books on clayworking are carried in the library, it would be well to take the matter up with the local librarian and call his attention to the fact that so long as there is a clayworking industry in your city, the library should have some books on the subject. In this way you will help yourself to the knowledge that you desire and, at the same time, make it easier for other people in the same line to secure the information that is necessary to make them better clayworkers.

Who Makes a Thin Veneering Brick?

665. *Ohio—Will you kindly advise, if you know, and if you don't know, will you try to find out, where the little veneering brick, with a special groove to fit a special sheeting is manufactured? It is about one-inch thick, by eight-and-a-quarter by two-and-a-quarter inches.*

The above question was published in the May 18 issue, and since then, one of our subscribers, the Charles Taylor Sons Company, of Cincinnati, Ohio, has written us as follows:

"The brick you are probably referring to was produced by the Fisher Veneer Tile Manufacturing Company, of Zanesville, Ohio, which company went into the hands of a receiver some two or three years ago. Peter Fisher, the inventor of this veneering brick, is now in the employ of our company, and if anyone is interested in the manufacture of same, we would suggest their communicating with him, addressing him at 620 Burns St., Cincinnati, Ohio. Mr. Fisher advises us that, if the quantity required should warrant it, he could arrange to manufacture the brick."

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

A Table to Figure Brickwork

Although the accompanying table was given in the September 1 issue of "Brick and Clay Record," it is republished in this department as a valuable addition to the preceding tables of data and information for the clayworker. In this form it may more easily be preserved and prove of great assistance in figuring brickwork to be done about the plant and for calculating the number of brick required for work on which the brickmaker may be asked to furnish the brick. It may also be of value in ascertaining the number of brick required for a building that is going up in frame so that actual figures might be presented to the owner to show that it does not cost so much more to build permanently with brick than flimsily with wood. The calculations given are based on the average sized common-brick, but a due allowance has been made for some variation in brick sizes. In addition to the table, the following data may be of service, it having to do with the superficial wall measurement. To each superficial foot of four-inch wall, allow seven brick; to each superficial foot of nine-inch wall, allow fourteen brick; thirteen-inch wall, twenty-one brick; eighteen-inch wall, twenty-eight brick; twenty-two-inch wall, thirty-five brick. The table was originally published in the "National Builder" and copied by several architectural journals.

Per Sq. Ft of Wall Ft. In.	Thickness of Walls									
	4½ in. or ½ Brick	9 in. or 1 Brick	13 in. or 1½ Brick	18 in. or 2 Brick	22 in. or 2½ Brick	26 in. or 3 Brick	30 in. or 3½ Brick	35 in. or 4 Brick	39 in. or 4½ Brick	44 in. or 5 Brick
0.6	3½	7	10½	14	17½	21	24½	28	31½	35
1.0	7	14	21	28	35	42	49	56	63	70
1.6	10½	21	31½	42	52½	63	73½	84	94½	105
2.0	14	28	42	56	70	84	98	112	126	140
2.6	17½	35	52½	70	87½	105	122½	140	157½	175
3.0	21	42	63	84	105	126	147	168	189	210
3.6	24½	49	73½	98	122½	147	171½	196	220½	245
4.0	28	56	84	112	140	168	196	224	252	280
4.6	31½	63	94½	126	157½	189	220½	252	283½	315
5.0	35	70	105	140	175	210	245	280	315	350
5.6	38½	77	115½	154	192½	231	269½	308	346½	385
6.0	42	84	126	168	210	252	294	336	378	420
6.6	45½	91	136½	182	227½	273	318½	364	409½	455
7.0	49	98	147	196	245	294	343	392	441	490
7.6	52½	105	157½	210	262½	315	367½	420	472½	525
8.0	56	112	168	224	280	336	392	448	504	560
8.6	59½	119	178½	238	297½	357	416½	476	535½	595
9.0	63	126	189	252	315	378	441	504	567	630
9.6	66½	133	199½	266	332½	399	465½	532	598½	665
10.0	70	140	210	280	350	420	490	560	630	700
15.0	105	210	315	420	525	630	735	840	945	1050
20.0	140	280	420	560	700	840	980	1120	1260	1400
30.0	210	420	630	840	1050	1260	1470	1680	1890	2100
40.0	280	560	840	1120	1400	1680	1960	2240	2520	2800
50.0	350	700	1050	1400	1750	2100	2450	2800	3150	3500
60.0	420	840	1260	1680	2100	2520	2940	3360	3780	4200
70.0	490	980	1470	1960	2450	2940	3430	3920	4410	4900
80.0	560	1120	1680	2240	2800	3360	3920	4480	5040	5600
90.0	630	1260	1890	2520	3150	3780	4410	5040	5670	6300
100.0	700	1400	2100	2800	3500	4200	4900	5600	6300	7000
200.0	1400	2800	4200	5600	7000	8400	9800	11200	12600	14000
300.0	2100	4200	6300	8400	10500	12600	14700	16800	18900	21000
400.0	2800	5600	8400	11200	14000	16800	19600	22400	25200	28000
500.0	3500	7000	10500	14000	17500	21000	24500	28000	31500	35000
600.0	4200	8400	12600	16800	21000	25200	29400	33600	37800	42000
700.0	4900	9800	14700	19600	24500	29400	34300	39200	44100	49000
800.0	5600	11200	16800	22400	28000	33600	39200	44800	50400	56000
900.0	6300	12600	18900	25200	31500	37800	44100	50400	56700	63000
1000.0	7000	14000	21000	28000	35000	42000	49000	56000	63000	70000

The Burner as a Bricklayer

An active, healthy man has no harder task than that of "killing time." On the average plant, to the somewhat exacting labor of the burner is added, in undue proportion, the necessity for a great deal of very consistent "loafing."

Cases are known where the burner, becoming tired of doing nothing, feeds about twice as much coal to the kilns as is necessary—just for the sake of having something to do.

The burner's position being one that may well be called semi-technical, puts him out of the class of labor which can be expected to shovel ashes or push wheel-barrows of

gas-emitting furnace refuse across bumpy brick pavements from the kilns to the dump. As a consequence, he is found on the shady side of his shanty (when the weather is warm) or on the sunny side later and earlier in the season, doing the hardest work that falls to the lot of mankind—that of doing nothing and doing it gracefully.

A recent letter received at this office from a burner in a western brick plant reads as follows:

"I see you have advertised some books on bricklaying. Will you kindly advise me which would be the proper book for a man who has had some expereince in laying brick, such as patching kilns, but who wants to know enough about the trade to be able to do real brickwork, such as might be required on any brick plant in connection with the erection of buildings and the laying of sample panels and other work requiring a trained hand? Is there any place where a man can go and take a course in bricklaying that would give him sufficient skill to do the kind of work which I have mentioned?"

When the number of kilns in a plant and—it may be added—the condition of these kilns, provide enough work to keep one man busy say half of a day, patching and repairing, the puzzle of how to employ the burner, or to be more exact, how to give the burner employment, is solved; but where there are only a few kilns, or where kilns are so well built or protected that repairing is not so constant in its demands, there ought to be some bricklaying to do nearly all of the time.

Nine-tenths of the brick yards throughout the country have frame structures of one kind or another that are an ever present fire menace. These could well be replaced with brick structures, built from the culls of the plant, and where there is a question of the "selects" being used as face-brick (this is speaking of a common-brick plant) sample pieces of brickwork could well be laid up in varying colored mortar joints to show the effect of these brick when properly laid.

A burner, knowing his brick better than any journeyman bricklayer, would be able to add just the right touch of color to his mortar joint to bring out the strong points of the brick. There are other reasons which would be apt to make him much more careful in his selection of brick and in the laying of them than would be found in a man that was doing this kind of work merely for a day's wage.

It takes a long time for the average brick plant owner to make up his mind in connection with anything that means a step out of the beaten path. Where the action indicated involves the co-operation of some man employed on the plant it doubles the time, at least, and, as a consequence, it is not too early now to think about next winter. There are a number of good trade schools where bricklaying is taught, and instead of giving your burner a vacation when you close down your plant (for repairs) next winter, arrange to give him a course in some school of bricklaying, of which there are several located for the most part in large cities. The tuition fee at these schools is very moderate and board can be obtained at prices that are very modest.

"Brick and Clay Record" would be very glad to give further information on the subject of these trade schools, and recommends them strongly to plant owners, as a means of training one or more of the men on the plant, so that odd jobs of bricklaying can be done in hours when these men are not otherwise employed.

Making Coal Consumption Correspond to Output

The amount of steam produced from a ton of coal should correspond to the quality of the fuel, and the amount of coal used in burning a thousand brick should remain fairly comparable to the value of the fuel. Consequently, any variations in the quantity of coal used should, apparently, be due to an alteration in the quality of the coal or to some carelessness of the burner.

At the same time there are many other factors which must be considered and the relationship between the amount of coal burned and the number of brick made is not so simple as it would appear to be at first sight. Coal, being a natural product, is not of entirely constant composition, but varies greatly from time to time, but considerable may be done to overcome this difficulty by purchasing it on a basis of guaranteed heating power.

The weather has an enormous influence on the amount of fuel burned, unless the boiler and kiln draughts are both produced by fans. Incidentally this is one of the many advantages secured by fan draught, the coal consumed being less in times of storm and the heating being more regular and uniform at all times. The weather has also an indirect effect on the amount of coal needed, inasmuch as the clay is usually wetter and more difficult to grind and mix (thus increasing the amount of power used) and the brick generally need more drying or a somewhat larger amount of fuel in the kiln. There are no means of measuring these variations with accuracy and to attempt to "allow" for them in calculations soon makes "confusion worse confounded."

On a wet day, or after a period of wet weather, it is not unusual to find that nearly double the power is required in some of the clayworking machinery as compared with that when the clay is in a good condition for treating. Something may, of course, be done by having a storage system for the clay and drawing from this in wet weather. The wet clay taken direct from the pit needs more engine power and may need more drying, but unless it is really too wet to work these additional costs will not be more than that of putting the dry clay in a shed and of taking it out again as required. The advantage of the latter method lies in the quality of the product rather than in any saving in cost of working.

Many things may be done to make the coal consumption have a closer relationship with the number of brick made. This is accomplished by removing the causes of waste of fuel. For instance, a kiln without a roof will always admit a certain amount of rain water, and this will at once increase the amount of coal to be burned out of all ratio to the number of brick in the kiln. A roof may cost money, but it will be money well spent, for there are few things which more ably illustrate the folly of a policy of "penny wise and pound foolish" than the absence of proper roofing on a kiln.

Another means of greatly reducing the coal consumption at the boiler, and in this way making it more uniform and proportionate to the output of brick, is to use a clay feeder which will keep the pug-mill supplied with just the amount of material with which it can best deal. Too much material at the pug-mill means excessive power and slow grinding, too little material means a low output and a waste of power.

The coal consumption will follow the output of brick most closely when the greatest precautions are taken to prevent wastage of power or fuel. Hence in a well-managed works the coal and the output do usually bear a close relationship to each other. It is unwise to dogmatize too closely on this matter, yet the tracing of a relationship between the coal consumption and the output of the plant will in many cases prove of great value, even if it only draws attention to defects which are capable of being remedied.—"Brick and Pottery Trades Journal."

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Offers Help to Southern Sewer Pipe Concern

In the May 18 issue we published a question which had been sent us by a Georgia sewer-pipe manufacturer, in which he asked where he could obtain literature that would help him in his endeavor to make the officials in charge of a public improvement see the superiority of burned clay pipe, over galvanized culvert pipe. A letter has since reached us, from George H. Tefft, secretary of the International Clay Products Bureau, which has considerable interest. It reads:

Item 661 on page 963 of your May 18 issue interests us very much. The International Clay Products Bureau has made a feature of presenting the superior qualities of vitrified clay pipe culverts, has accumulated considerable data on the subject, has engineers perfectly capable of presenting this data to road congresses and so on, and has operated, we think, with considerable success, upon occasion, in the southeastern states. If your correspondents are anxious to obtain this literature and the advantages that go with it, they might do well to correspond with us to the end that they become supporting members of this bureau. In that case we would be glad to assist them. Up to this time, we have not been able to devote as much attention to the Southeast as the situation demanded, because so few of the manufacturers in that part of the country were able to foresee the dangers of wrinkled tin as a competitor, and of the necessity of being able to properly combat it.

There is no doubt of the good work that has been done by Mr. Tefft's organization, and his advice to our Georgia correspondent is very timely. No clay products manufacturer wants to "get something for nothing"—the inference being that advice and help which costs nothing is generally worth about what people pay for it. Mr. Tefft's office is in the New York Life Building, in Kansas City, Mo.

Says We Are Unfair to Concrete

Some time since, in a subscription campaign which "Brick and Clay Record" was waging, it had occasion to ask—pointedly—why the man addressed did not subscribe to our magazine. One of the replies that was received is published below, the name of the writer being omitted:

I have your letter asking why we do not subscribe for "Brick" and why we are not interested. We manufacture decorated design tiles, some quite elaborate, and we have our own process and way of burning same. So while your magazine may be of great interest to brick plants, it doesn't help us any more than a catalog of house paints would help a portrait painter.

Another thing is your unfairness in the matter of concrete and cement. There may be times where concrete work is as poor and dangerous as the poorest salmon brick. It is unfair to select the most unfortunate cases and hold them up to the world as a sample of cement construction at its best, in order to make the brick business shine forth. It is very unfair, and it doesn't fool the people, but it places you in a bad light with all of the brick manufacturers and it doesn't fool—although it may please them. All of our work is in clay, not cement, but we know a good deal about cement and we are going to give it all the credit it deserves.

Some months ago "Brick and Clay Record" stated a definite editorial policy. It was in connection with the much discussed "educational propaganda" of the lumber interests. Among other lines that were printed in "The Editor's Corner," in the March 2 issue were there: "If it (brick) have a quarrel with cement, it will be because cement is being used in places where brick construction would have been better—*which means safer and more economical.* Otherwise it (brick) will recognize the fact that cement-concrete has a place in the building world, and that it is folly to assume that hundreds of erecting engineers are venal, or ignorant, or insane."

After that statement, there can be no doubt of the attitude taken by this magazine toward materials competitive to brick. The best part of it is that the policy of giving credit where credit is due, even though it concern cement, or concrete, or gypsum, is sweeping the clay-products industry. "Brick and Clay Record" is reflecting the thoughts of the best men in the field of claycraft, among whom the writer of the letter published above holds an honorable place.

Some Interesting Facts About Drain Tile

Indications from all parts of the country are that there will be more drain tile used by the farmers during 1915 than ever before. There is also little doubt but that an increased number of clayworking plants will take up the manufacture of this ware during the present year, all of which means that there is more than an ordinary interest in matters pertaining to the manufacture and use of this commodity. In this connection, the following letter from James J. Hinde, of Cleveland, Ohio, is worthy of note, since it contains the experience of a clayworker who has spent many years in supplying the farmers with drain tile in a state which ranks high in the production of that ware. Speaking with reference to the usefulness of burned clay on the farm, Mr. Hinde says:

Here lies a wonderful field that has not been touched, except by the drain tile manufacturers, and as evidence of work before them, not one-tenth of the tilable land of the nation has yet been drained.

Now that ditching machines can be had which can be operated any season of the year, and which will lessen the cost of trenching three-quarters as compared with hand labor, there no longer remains the excuse that farmers have heretofore had, of scarcity of labor or the annoyance of boarding men while the work was being done.

It is safe to say that a demand for fully double the amount of drain tile now being sold, is already created and would be supplied, if modern plants could be established in locations where excessive freight rates were avoided and a large stock carried to suppy the tile when needed. Sufficient

advertising should also be done to let the farmers know where the tile can be obtained.

There is no investment which the farmer can make on which he will earn such large and sure returns as in draining his land, because the tile not only carries off excess moisture but puts the land in condition to store sufficient moisture so that the crops will withstand a drought.

A progressive farmer has aptly said that it is only the first string of tile that *costs* the farmer any outlay of money, each succeeding drain being paid for by the excess crop grown on the drained land.

Farmers that have their land well under drained, realize that they are profiting one hundred per cent on their investment every year, and they also know that there is no land that cannot be benefited by drainage.

Manufacturers should understand that farmers do not wish to purchase tile far in advance of the time when they can use them and that it is impossible for them to lay tile while their crops are growing, hence the necessity of carrying large stocks for quick shipment.

To briefly sum up the situation, for success in the making of drain tile it is necessary to establish a modern plant where suitable clay can be mined all year round. Sufficient capital should be available to permit the carrying of stocks for six months, and a reasonable amount of judicious advertising should be done in the farm journals having the largest circulation in the territory in which trade is sought.

Particular attention is called to the closing paragraph of Mr. Hinde's letter in which he includes advertising as one of the essentials for a prosperous drain tile business. This conviction, as has already been stated, comes from experience. The need for a greater publicity for drain tile may more readily be realized when it is remembered that there is nine times as much land waiting to be tiled as has already been drained, and that the greatest barrier to the draining of these lands is a lack of knowledge on the part of the farmer regarding the benefits of drainage.

Says American Potters Excel

The following letter has a patriotic ring that will find its echo in the breast of every true American, who believes that we have, under the Stars and Stripes, a goodly fund of that quality which makes "tradition" instead of depending upon it. Charles L. Casey, president and general manager of the Guernsey Earthenware Company, of Cambridge, Ohio, writes, under date of May 28:

We have your favor of the 24th, and certainly wish to thank you very much for calling our attention to the Austro-Hungary article in your issue May 18th. Read it last night with a great deal of interest, and am glad to say that the points that this young man is making in this article, are all being carried out by us.

We were aware of all the information that he gave, and are following that line in our manufacturing. Are very glad to say that our manufacturing is meeting with the general approval of the jobbers and trade. We are receiving some very nice orders after our product has been thoroughly tried out, so that we feel quite confident that we are right.

We are mailing under separate cover, one of our catalogs, showing just what we are making in chemical porcelain at this time. We expect to add between now and the 1st of August, some items that will broaden our line considerably.

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN the rougher forms of clay products—brick, tile and hollow block—the cost of freight transportation is a large item of expense. A preferential freight rate opens or closes a market, despite every cost-saving process that may enter into the manufacture of the ware. "Brick and Clay Record" gives its readers a valuable service, through this department, in publishing in convenient form, the changes in freight rates on brick (common, pressed, enameled and fire), hollow tile and the like. These freight changes should be closely followed, as any one of them may affect your market or your selling price. In addition to this, Irwin W. Preetorius, Freight Traffic Counselor for this magazine, will check freight expense bills without making any charge for the service, and will point out overcharges, wrong routings and other points that have been adding expense to your carrying charges in the past. He will also give advice as to the proper way of filing complaints before the Interstate Commerce Commission.

SEVERAL OPINIONS have been handed down by the Interstate Commerce Commission during the past two weeks, which vitally affect shippers of clay products. The most important is that regarding the Cummins' amendment to the interstate commerce law in which the commission declared that no increase of ten per cent was justified. Other opinions were those on the separation of the railroads from the steamship companies operating on the Great Lakes, and on back-haul rates from the Pacific coast.

THE CUMMINS' AMENDMENT DOES NOT RAISE RATES

"It does not appear that this amendment to the act affords justification for an increase in rates on commodities in general," expresses in a broad way the opinion of the commission regarding the Cummins' amendment. A hearing was held some weeks ago on this amendment, at which both the shippers and carriers were asked to present their views. At that time it was rumored that the commissioners, themselves, were not exactly sure as to the effect this amendment (which is to become effective on June 2, 1915) would have on rate increases. In discussing the case in their decision the Commissioners say:

"Many widely varying or diametrically opposed ideas have been expressed as to the effect of this amendment and as to what will be the lawful rates under present tariffs when it becomes effective on June 2, 1915. The Commission has been urged to some expression in the premises. It has held a hearing on this subject, and the questions there discussed have been argued on briefs. From the best information it has been possible to obtain and the consideration it has been possible to give this matter within the limited time available, the Commission expresses tentatively the views hereinafter indicated." It then goes on to give the reasons for its decision

(*Continued on page* 1078.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Gasoline Industrial Locomotives

The purchaser of locomotives for industrial service has four principal sources of power from which to select—steam, electricity, compressed air and gasoline. The last named is making encouraging progress, and gasoline locomotives, when used in service to which they are suited, are proving successful and economical. They are entirely self-contained, being dependent upon no source of power external to themselves. As there is no boiler requiring attention, they can be handled by one operator; and when properly designed for the work, they are as reliable in service as any other form of motive power. They consume no fuel while standing, and hence are particularly suitable for intermittent work.

Industrial switching service is severe in character, and the locomotives must be so designed and built that they can remain at work for comparatively long periods with a minimum amount of attention. Steam locomotives have made excellent records in this service, and the most successful gasoline locomotives are those which follow steam locomotive practice as closely as possible. The driving mechanism, from engine to wheels, should be positive, with liberal bearings throughout and ample provision for lubrication. As large a proportion of the total weight as possible should be spring supported. The comfort and convenience of the operator must be carefully studied, as it is particularly important, in this kind of service, that the locomotive be easily handled.

The illustration on the back cover of the May 18th issue shows a gasoline locomotive in service at the plant of the Bach Brick Co. This machine was built by The Baldwin Locomotive Works, under patents granted to A. H. Ehle, and represents a type which has been in successful operation for several years. The wide experience of the builders in the construction of steam locomotives for all kinds of service, has enabled them to develop a thoroughly practical series of gasoline locomotives weighing from 3½ to 9 tons, and designed along the lines previously described. The advantages of gasoline locomotives, to which reference has been made, fit them for light switching service in brick yards, where reliable and economical units, simple in construction and easily operated, are required.

The locomotive for the Bach Brick Co. is propelled by a four-cylinder, water-cooled motor, having 5½ in. by 7 in. cylinders. The main frames are supported on coil springs, and they are of the bar type, similar to those used in steam locomotive practice. The rear end of the locomotive is covered by a canopy for the protection of the operator. The equipment includes a gong, two oil head-lights, and sand boxes at each end. The brake is of the self-locking screw type, operated by hand and having shoes on all the wheels. The shoes are of the M. C. B. detachable pattern, hence they can be easily replaced when worn.

The principal dimensions of this locomotive are as follows:

Gauge	2′ 5½″	Length	13′ 0 ″
Wheel-base	4′ 0 ″	Width	5′ 2 ″
Wheels, diameter..	30 ″	Height	7′ 9 ″
Journals .....3¼″ x 4½″		Weight .....14,000 lbs.	

Catalog will be furnished on request by the Baldwin Locomotive Works, Philadelphia, Pa.

Things a Lump of Coal Can Do

The unbelievable variety of things which modern science is able to evolve from the sable modesty of a lump of coal is shown in graphic fashion by the Barrett Manufacturing Co. in its exhibit at the San Francisco Exposition.

An enormous block of soft coal is shown surrounded by its innumerable children. The first generation consists of ammonia, illuminating gas, crude benzol, coal-tar and coke.

The crude ammonia is the parent of household ammonia and of the anhydrous ammonia used in producing artificial ice. Then there is ammonium chloride, an important element in electric batteries. Ammonium nitrate is used in the production of high explosives. Ammonium bicarbonate is valuable in the modern baking of food, and most important of all is ammonium sulphate, a powerful soil nitrifying agent, which is becoming of enormous importance to American farmers as a fertilizer. Plants of various kinds are shown that have been grown with and without the ammonium sulphate under identical conditions, exhibiting a striking difference in the strength of the crops.



Exhibit of Barrett Manufacturing Co. at Panama-Pacific Exposition

Illuminating gas burns up in a blaze of light and leaves no heirs.

Crude benzol, the next of King Coal's daughters, has a beautiful progeny of analine dyes in all the colors of the rainbow. It is also of great importance in the manufacture of automobile tires and in the production of artificial leather. Then there is toluol, a basis for modern high explosives and much in demand for the war.

Coal tar, the fourth of King Coal's immediate descendants, is the mother of Tarvia, the bituminous binder for roads. Barret Specification Roofs, consisting of tarred felt and pitch, are used for practically all the great commercial buildings such as the New York skyscrapers. There is also a long list of the ready-roofings used by farmers for their barns, felt and building papers for the lining of walls to keep out heat and cold, waterproofing felts, which are used with pitch for the lining of excavations, basements and tunnels to exclude dampness of the soil. Then there is paving pitch used in the joints of block pavements for city streets. Creosote oil which can

be impregnated into wood and gives us wood block street pavements, durable piling and long lived fence posts and mine timbers. Creosote alone is worth $25,000,000 a year to the country in its ability to prolong the life of fence posts.

In addition, coal tar is the parent of innumerable chemical and medical products, especially phenol or carbolic acid, an indispensable medical disinfectant with innumerable industrial uses, including the process of manufacturing phonograph records.

Naphthalene or coal tar camphor is useful in keeping moths out of clothing.

Among the other great-grandchildren in the carbolic branch are picric acid, a high explosive, and a long list of bactericides and disinfectants, including the wonderful pyxol which is twenty times as powerful as carbolic acid and is death to germs of all kinds yet perfectly harmless to animal life.

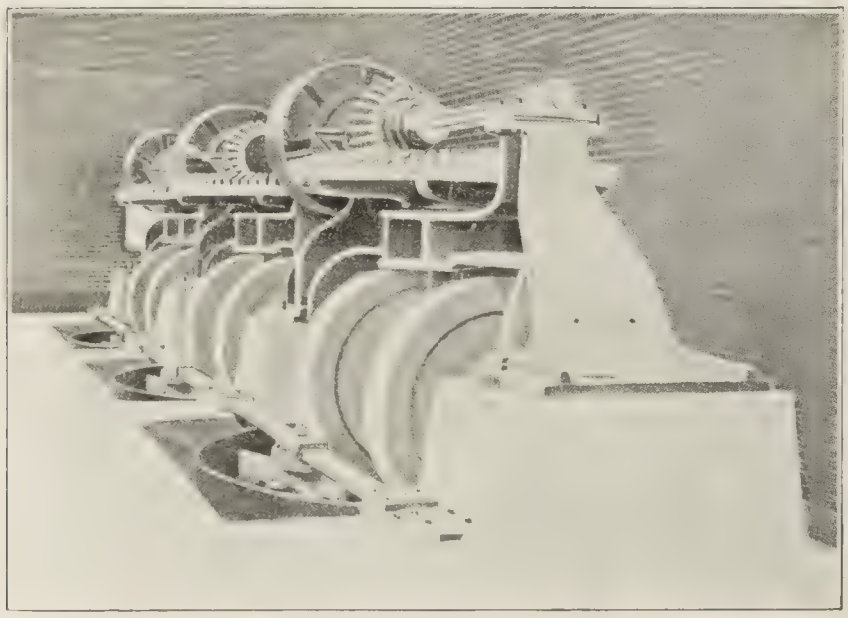
Coke is useful as fuel and has special value in the steel industry.

All told, coal has the largest variety of derivatives of anything that is dug out of Mother Earth. The Barrett Company's exhibit shows many of the processes and has been well planned. It is in the Palace of Mines and Metallurgy and is always surrounded with a group of amazed spectators.

The Means Dry Pan

The dry pan represented gives a clay grinding machine that the years of experience of its manufacturers has enabled them to perfect. The Toronto Foundry & Machine Co. claim that it has proven itself the peer of any other machine of the kind manufactured, in design, grinding, and cost of repairs, the latter being an item worth your consideration, it being 25 per cent less than other machines coming under their observation, and has proven beyond a doubt the good qualities of the "Means" standard dry pan.

In the "Step" and "Toe," or bottom wearing surface, a combination has been perfected that is unsurpassed and



Battery of Means Dry Pans

unequaled in point of service; the "Toe" is made from a special mixture of chilled cast iron, being 5½ in. in diameter and made with chilled grooves so that the point of contact is always thoroughly lubricated; the "Step" is made from phosphor bronze and is of large dimensions; these are incased in a dustproof receptacle, and allows on an average of two gallons of oil for the "Step" and "Toe" to work in at all times. The Toronto Fdry. & Machine Co. now have dry pans in operation in which these parts have not been replaced for over ten years.

The upright shaft is an open hearth steel forging, one shaft being all that is ever required, it being 6¾ in. at the top where the main gear wheel is fitted, 8½ in. at the bottom; the driving shaft is 4 in. cold rolled steel and is fitted with two key ways for pinion wheel that the pan may be driven in either direction by reversing this pinion from one key to the other. A 42 in. x 16 in. friction clutch pulley of the best design made is used for driving. The mullers are 50 in. high and are made either 10 in. or 12 in. face, weighing from 5,500 lbs. to 6,500 lbs., and have removable tires, and can be made larger and heavier if required. These mullers are fitted with removable hubs that have a bearing on the muller axle of 26 in., the inside of the hubs being cored out, allowing space for carrying a suitable supply of oil. The muller axles are of the best refined bar, turned and finished to 3¾ in. in diameter; these axles are fitted in a heavy cast iron yoke in the center, making a continuous connection through the pan that is very rigid and substantial.

The scrapers are connected to the frame and are held in place by a 2 in. x 4 in. bar; the scraper heads are adjustable and can be set at any angle. The rim is made from two pieces of ⅜ in. x 14 in. open hearth steel and is bolted to the arms. The arms are eight in number and are securely bolted to the main spider; they are made very heavy and will withstand an unusual strain.

The screen plates are made heavy and from a special mixture of steel and cast iron. These are cast on a chill, making them very hard and giving the best of wearing surface; the space for screening is 21 in. wide. The grinding plates are removable, are 2 in. thick, made from very close tough iron. The main spider is bored and turned to fit the main upright shaft and weighs 3,800 lbs., making it the heaviest spider used in any pan, so it is claimed. The total shipping weight of this pan complete is 40,000 lbs.; from 30 to 35 h. p. is required to run it when under full load.

Plans for foundation are furnished with each pan, together with all necessary foundation bolts and washers.

The Toronto Fdry. & Machine Co., Toronto, Ohio, will be glad to send more complete information to interested parties.

Coal for the Kilns

The manager of any plant devoted to the manufacture of clay ware, has as one of his most perplexing problems the purchasing of the correct coal for his special purpose.

All coals look the same to the layman, but it does not follow that they are alike in ability to give service.

A coal that gives satisfactory service in burning paving brick may not be at all fitted to successfully burn face brick, and vice versa. A coal with a fair percentage of sulphur may be found good on hollow tile plants, whereas if used in burning face brick it might be an absolute failure.

The same comparative results may be found operative when considering the other constituents, that is, the volatile matter, fixed carbon and the ash.

In general it may be said that the best coal for burning clayware, is—a coal that has a long flame, relatively high in volatiles; a coal low in ash, and withal a percentage of fixed carbon high enough so that the fuel bed does not burn out quickly but delivers a constant supply of heat, for a satisfactory length of time.

This is the best coal to burn, and although it does not occur often it is the kind and quality of fuel that The Big Creek Colliery Co. are furnishing the clay plants who have contracted with them for the year's tonnage.

Another point that the clay plant manager must not overlook, is—the coal company's ability to deliver coal. This involves two points, mining facilities and railroad facilities.

Here again The Big Creek Colliery Co., of Chicago, is

fortunate in being able to give prompt service—the kind of coal you ought to have before the time you need it.

Furnishing coal for the kilns is not an experiment with them, for they have supplied boiler and kiln coal to some of our largest and best known factories for years, and are prepared to serve you with the best, the correct coal for your needs.

Kiln Grates

About four years ago Elmer E. Miller of The Canton Grate Co., Canton, Ohio, installed shaking grates in a few plants near that city. These installations after long, hard service, proved Mr. Miller's contention that "the grate that is good for the boiler is good for the kiln."

It reduces easily the amount of labor required, burns efficiently every pound of coal, placed on it; and to give the desired temperature it requires only 75 per cent of the fuel formerly used in the old types of furnace.

Today dozens of plants have installed the Canton Grate on trial, and their successful operation has led to complete installations. The success of this, another advance step in clayworking equipment is assured.

A Wet Clay Dryer

Wet clay is more generally the cause of a reduced output from the grinding room than any other one cause. This is particularly true of all plants that grind and screen the materials.

A reduction in the amount of tonnage ground is the direct cause of a reduction in output of finished ware.

Wet clay gums up the crushers, dry pans, and their screen plates. It sticks in the elevator buckets; covers the piano wire or perforated metal screen with a muddy blanket, and causes an excess of material to be returned to the pans through the tailing chutes.

To wet clay can be attributed the loss of hundreds and even thousands of dollars each year, on seventy-five per cent of our plants, due to inability to produce maximum plant output. In addition to this it increases the load on machines, belting, shafting, and power plant to an enormous extent; thereby causing wear and tear and an increased coal consumption under boilers; all this with decreased production.

The American Process Co., of 68 William St., New York City, have in their rotary dryer, a cheap, practical method of drying clays, so that the output can be increased, and held to standard during stormy weather and in early spring months. It means dollars in your pocket to find out the particulars. A postal card request will bring the information.

The Poidometer

This machine is designed to give an accurate mixture of materials by weight, and also to regulate the temper water so that it flows uniformly, thereby assuring an accurate mix perfectly tempered.

Recently a series of tests were conducted by the Schaffer Engineering & Equipment Co. with a view of determining the accuracy of the unit. Mr. Schaffer says:

"The tests were made by marking the belt off in feet and placing an indicator so as to be able to get the exact travel of the belt. The machine was set to deliver 14 lbs. to the foot. We had a receptacle which we placed under the delivery end of the machine and would operate the machine until it would run six feet. This would give us 84 lbs. of material. Each batch or the quantity on the six feet, was placed on a pair of very accurate scales and a careful record kept of each. We took off eighteen tests of this kind, which produced 1,517 lbs. and should have produced 1,512 lbs., or in other words, we obtained an accuracy of 99.67 per cent. The greatest variation between any tests taken off was one-half of one per cent.

"We used fire clay in making this test, which was more or less sticky and was prepared so that part of it was fine material and part of it was very lumpy, some of the lumps being as large as 2 inches in size. The material was separated and fed into the machine in a divided manner, so as to produce as large a variation in the condition of the material as possible. By a cubical test the material showed that it would vary in weight 20 per cent in accordance with its volume.

"We made one test by using plaster containing hair, without making any changes on the machine from what it was set at for running the clay, and we obtained a 99 per cent accuracy. You, no doubt, understand that there was about 100 per cent change in the volume of the two materials. We made one test by using 1 inch crushed limestone and obtained an accuracy of 99¼ per cent without making any adjustments on the machine.

"With a few minor changes, we expect to make on our next machines, we believe we will strike still a higher degree of accuracy than this."

The Shaffer Engineering & Equipment Company, of Tiffin, Ohio, manufactures the poidometer described and will send more complete information on request.

A Marion Pamphlet

The clay plant manager who contemplates the installation of a steam shovel can not acquire too much information on the subject.

To augment the purchaser's knowledge The Marion Steam Shovel Co., Marion, Ohio, has produced another attractive shovel booklet, entitled "Marion Reliability and Your Profits." This catalog, although very similar to a previous pamphlet called "Digging and Mixing Clay—One Operation," is different in that it describes and shows the use of Marion shovels in all classes of excavating work.

"Digging and Mixing Clay—One Operation," specializes on the clayworker's shovel, in description and illustration; the later and more general pamphlet, "Marion Reliability and Your Profits" is a fitting complement.

A Fire Retarding Paint

E. R. Stowell, of Oden, Mich., is the inventor and patentee of a Carbide paint that is both heat resisting and fireproof.

It is claimed that the paint will endure heat that will start fusion in a fire brick, and is proof against acids, gas, and all chemical fumes.

Its value to clay men is in its use to paint the walls and crowns of kilns, as it prevents the leaking of cold air into the kiln at the bottom, and loss of highly heated gases from the crown and top.

Applied on buildings, sheds and shingles it prevents ignition by sparks. No paint can make wood absolutely fireproof, but this paint retards the action of fire to such an extent that it can only burn slowly, thus giving fire fighting apparatus a chance to get to work. The paint filament itself can not be destroyed by fire.

The Walter A. Zelnicker Supply Co., of St. Louis, Mo., have their June Bargain Bulletin ready for distribution.

In it is detailed the bargains in car-movers, babbitt metal, new and relaying rails, mill and factory supplies, in short, all the odds and ends that are so necessary on the clay plant. The goods sold are first quality, the prices are low due to extraordinary ability to purchase in large quantities and at less than cost prices. Send for the bulletin, it may save you money.

Ricketson's Mortar Colors

Pure, brilliant in tone, economical in use, absolutely reliable and a permanent guarantee against fading and washing. Why not insist on having them?

Red, Brown, Buff, Purple and Black

Ricketson Mineral Paint Works, Milwaukee, Wis.

Anchor Brand Colors

For Mortar Cement and Brick

Brown, Black, Red and Buff Strongest and most durable

Manufactured by

C. K. WILLIAMS & CO., EASTON, PA., U.S.A.

Correspondence solicited

H. M. DEAVITT, *Ceramic Chemist*

209 South LaSalle Street, Chicago

Best equipped consulting laboratory in the West for the analysis of clays and clay products.

Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.

Expert examination of deposits and plants a specialty.

Clearfield Brick Machinery

FOR HARD SERVICE

Literature on Request

Clearfield Machine Shops, Clearfield, Pa.

Our business is diagnosing and remedying

TROUBLES

of manufacturing for the Clayworker. If you are experiencing loss in any department, mechanical, drying or burning, consult

H. & B. COPPING, Kankakee, Illinois

We personally do the work.

DRYER CARS

ALL STYLES—ALL SIZES

H. W. GERLOCK, Huntingdon, Penna.

ZOOK SILO FRONT

It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

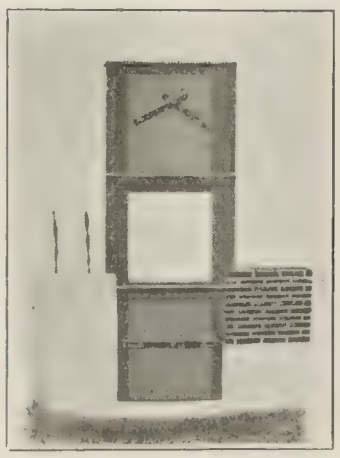
It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.

G. W. ZOOK

BUFFALO KANSAS



Soil Moisture

And Its Relation to Crop Production

A Paper Read at the Convention of the Iowa State Drainage Association, Webster City, Ia., February 25

By W. J. Schlick

LAND DRAINAGE has been defined as the removal of the surplus water from the soil. In the popular mind, this definition is not only true, but is complete as well. Yet it can hardly be said to completely define the actions which result from the proper construction of a rightly designed under-drainage system.

It has long been generally understood that under-drainage brings about many beneficial results beside the removal of surplus moisture from the soil, but the reasons for these results, or the manner in which they are brought about, is but vaguely understood. The writer had occasion recently to make a study of the relations between under-drainage and the forms and movements of soil moisture and their combined or resulting effects upon the the under-drained soil and crop production. The subject in its entirety is so complex, that only an elementary treatment of some of its phases can be given.

Of the water which reaches the earth's surface as rainfall, one part passes away over the surface, another part is taken up by the soil and the third part evaporates from the place where it fell. It is the second part, that which seeps down into the soil, which is of interest here, because this is the source of supply for maintaining and replenishing the soils with moisture.

The moisture capacities of soils with the different soil types and formations, though the soils with the largest per cent of pore space naturally hold the largest amounts of moisture. The finer grained soils, having the larger per cent of pore space, consequently have greater capacities for moisture than the coarser grained soils. One authority gives the maximum moisture capacity of light sandy loam as eight per cent and that of black cretaceous prairie soil or clay as forty per cent.

THE THREE TYPES OF SOIL MOISTURE

Agriculturists have long divided soil moisture into three classes, each of which has a distinct relationship to the operation and effects of under-drainage and to the growth of crops. These three classes are:

Gravitational moisture, or that which is free to move under the influence of gravity.

Capillary or film moisture, which is held against the force of gravity.

Hygroscopic moisture, or that which condenses from the atmosphere upon the surface of the soil particles.

Of these three types of soil moisture, the capillary moisture is the only one which is available for sustaining plant life. The gravitational moisture will so completely fill the soil pores as to kill all vegetation except a few water plants. The hygroscopic moisture is held in such intimate contact with the soil particles as to be unavailable for plant use, and then the amount of this form of moisture present in most soils is usually so small as to make it of little relative importance.

The foregoing will make clear in a general way, the rela-

tionships of these types of soil moisture to under-drainage. The gravitational moisture, being the only one which is free to move under the influence of gravity and being injurious to plant growth, is the type of moisture which the drain must carry away from the soil, if the wet land is to be made to produce the best crops. Further than this, the capillary moisture supply of any soil must be sufficient for the crop's needs if a good yield is to be obtained. In other words then, the amount of gravitational moisture present in a soil is one measure of the need for drainage and the amount of capillary moisture which can be stored in the soil is one measure of its ability to produce crops. This in turn depends upon many things, but a sufficient supply of available moisture is one of the essentials.

When the supply of soil moisture is replenished by rainfall that part in excess of what can be held capillarily becomes gravitational moisture. As the water seeps down into the soil, the capillary films gradually increase in thickness as the plane of saturation is approached. Below the ground-water level, the soil pores are completely filled with water.

As was indicated by the definition, capillary moisture is present in the soil as a thin film of moisture surrounding each soil particle. Nearly everyone has seen how water will rise inside a small glass tube when that tube is placed on end in a vessel of water. The same force, surface tension, which causes the water to rise in the glass tube holds these films of moisture around the soil grains.

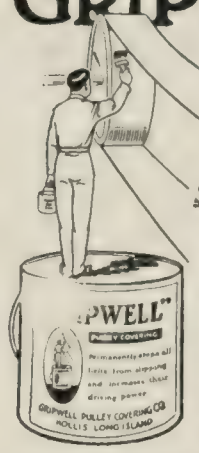
It naturally follows that the soils with the greatest numbers of grains per unit of volume will hold the largest amount of capillary moisture. Determinations of the maximum amounts of this type of moisture present in the common types of soil show that sand has about eleven per cent, loam about twenty per cent and clay about thirty per cent. These facts illustrate the relationship between the size of the grains composing a soil and its capacity for capillary moisture. However, some of this moisture is held in such intimate contact with the soil particles, that the plant roots cannot take it up. Only about two-thirds of the total capillary moisture content of a soil is available for plant use. This reduces the maximum available moisture in the top four feet of sand to a depth of about five inches; that in loam to a depth of about seven and one-half inches; and that of clay to a depth of about seven inches. The particles of the clay soil are so fine that a larger per cent of the total capillary moisture content is made unavailable.

Experiments made by Prof. King of Wisconsin, and by Prof. Hunt of Illinois, show that in July, corn will take up moisture equivalent to a depth of 1.55 inches per day. This indicates the great amount of capillary moisture which this one crop will require, if a full yield is to be obtained. Other experiments by these men indicate that the average farm crops in the Middle West require moisture equivalent to a depth of from 3.7 inches to 15 inches for the growing season. These figures are only given here to show the relatively great amount of water which is needed if the best crops are to be produced. The average yearly rainfall in Iowa is only 30 to 35 inches, and yet some crops will use half this much water each growing season.

HOW MOISTURE MOVES IN THE SOIL

The nature of the movement of each of these types of soil moisture which have been mentioned, namely gravitational, capillary or film and hygroscopic moisture, is indicated by the name and definition of the type. These movements have the same relationship to under-drainage as do the types of moisture. The gravitational movement, or the percolation of surface water, is the one by which the surplus moisture reaches the drain. The capillary movement has no effect upon the operation of the drain, but it does have a very im-

"GRIPWELL"
Pulley Covering
Does ONE Thing and Does it WELL
Stops Belt Slipping



Belt slipping gives your engineer his young gray hairs and works untold havoc with your fuel bills, sending them skyhooting high regardless of the work you get done. "Gripwell," as the picture shows, is applied to the pulley together with a specially prepared canvas. It gives the PULLEY a leather-like surface. It gives the BELT a greater driving power — 30% greater—or enables you to run the belt ⅓ slacker under a full load. "Gripwell" does not injure the belts: it is actually a belt preservative. Its use means a saving in money, time, labor, oil, power and fuel. Works equally well with all kinds of belting; canvas, leather or rubber. Doesn't your business judgment prompt you to take it up?

Write to-day for illustrated folder No. 14.

SOLD ON FIVE-YEAR GUARANTEE

"Gripwell" Pulley Covering is guaranteed for five years if applied according to directions. Not affected by acids, fumes, smoke, steam or climatic conditions. Price 75c per lb., f. o. b. New York.

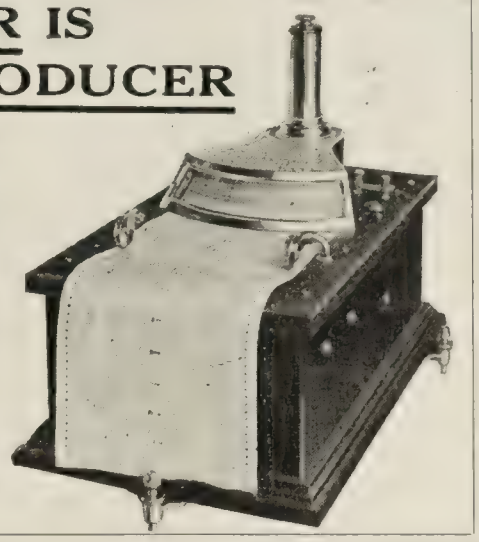
"Gripwell" Pulley Covering Co.
601 Candler Bldg., New York City, N.Y.

THE BURNER IS THE PRODUCER

Are you willing that he should produce by guesswork?

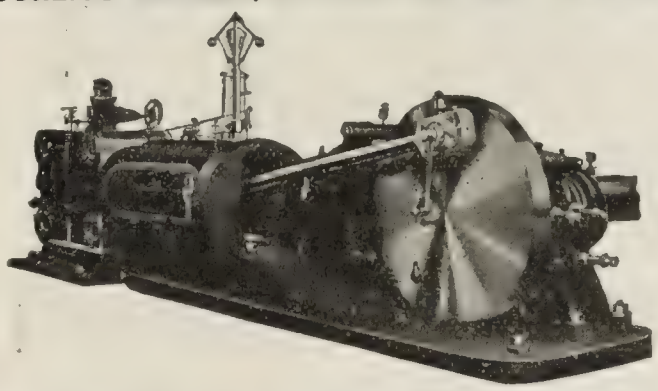
Combine forces with him. Give him a Price Pyrometer installation and note that his enthusiasm and his wisdom grows.

He takes on fresh courage for his work because he knows what he is doing.



The Price Electric Co.
12367 Euclid Avenue
Cleveland, Ohio

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA

"Buckeye Rails Are the Standard for Quality"
THE BUCKEYE ROLLING MILL COMPANY
Exclusively Manufacturers of First Quality Light Steel Rails and Accessories
Offices: Steubenville, Ohio
Mills: Newark, Ohio
BUCKEYE MEANS BEST
BEST MEANS BUCKEYE
All Sections from 12 lb. to 40 lb. per yard
Write or wire us when in need.
No order too large to handle promptly or too small to secure immediate attention.



Pyrometer Advice

Don't condemn pyrometers because you failed to get results with the ones you have used. It is evident you have never installed the STUPAKOFF STANDARD LE CHATELIER PYROMETER. Write for a copy of "Pyrometer Facts."

The Stupakoff Laboratories
Pittsburgh, Pa.

STRENGTH UNIFORMITY DURABILITY REG. U.S. PAT. OFF.

Webb Wire Wears Well

Our
"Red Label" Piano Wire
is made especially for Brick and Tile Cutting

All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

Ask for Sample and Prices

THE WEBB WIRE WORKS
New Brunswick, N. J.



Davenport Locomotive Works,
Davenport, Iowa

PERFORATED METAL SCREENS

As required for BRICK MAKERS USES.

PERFORATED SHEET METALS OF EVERY DESCRIPTION — HENDRICK MANUFACTURING CO. CARBONDALE, PENNA.

Manufactured by

New York Office
Room 1028 Cortlandt Building

HENDRICK MFG. CO.
CARBONDALE, PA.

portant effect upon the results of under-drainage. When the plane of saturation is lowered by the removal of a part of the surface water, the moisture for crop uses must be supplied capillarily.

The rate of the movement of gravitational soil moisture depends upon the gravity head and the hydraulic efficiency of the channels through the soil. These channels are either the soil pores, shrinkage cracks, root cavities or worm bores. The flow through the soil pores is susceptible to analysis and calculation, but the size and number of these other and larger channels and the flow through them are indeterminate.

As in any other case the flow of water through the soil depends upon the ratio of the cross-sectional area of the channel and the frictional resistance, which naturally depends upon the surface area of the walls of the channel. The flow through a large-grained sand soil will be much more rapid than that through a loam soil, and still more rapid than through a fine grained clay soil. The direction of the movement is always in the path of least resistance. Unless the movement is through a porous layer confined between two impervious layers, the flow is due to gravity only and is either vertical or on a slope. The tendency is for the water to move from the surface vertically downward to the plane of saturation and then laterally on a slope, entering the tile from the bottom.

It has already been stated that capillary moisture is present in the soil as a thin film surrounding the individual soil grains. The capillary moisture is held by surface tension against gravity. Its movement is due to the same force and may be in any direction, though the flow always takes place from the wet soil to the drier. The force exerted by surface tension is always greater in the moisture in fine grained soils, so that the extent of the movement is greater in that type of soil. The size of the soil grains, however, may be so decreased as to make the spaces between them so very small as to allow only a slow rate of movement. In any case, the amount of water which will be lifted vertically decreases as the height of the lift is increased.

Investigations have shown that in most agricultural soils, moisture sufficient for crop production will be raised a height of two and one-half to three feet. That is, even if the drains should lower the ground water level three feet below the root zone of the crop, sufficient moisture would be supplied capillarily.

THE MOVEMENT OF GRAVITATIONAL MOISTURE

The food which a crop takes from the soil must be dissolved in the available moisture supply. The formation of this plant food depends upon bacteriological action, and its transportation to the plant roots, upon the movement of capillary moisure. The presence of gravitational moisture prevents the growth of these bacterial organisms and the formation and transportation of plant food, and so shuts off the supply of plant food.

The roots of our ordinary field crops will, if soil conditions are favorable, ordinarily extend to a depth of three and one-half to four feet into the soil. In order to provide as large a food supply as possible, the plane of saturation should be held as low as three and one-half or four feet if possible. Of course, the rapidity with which the surplus moisture will pass through a certain soil to the under-drains must be considered in this connection.

The movement of gravitational soil moisture, or ground water, has long been a subject of study and experimentation. A number of formulas for the movement in certain soils, or in soils which had been or could be accurately analyzed, have been developed. These formulas, however, are

too complicated to be of general use in calculating the movement of water to a drain.

In 1856 Darcy, a Frenchman, "announced that the flow of water in a certain direction through a column of soil is proportional to the difference in pressure at the two ends of the column and inversely proportional to the length of the column." He expressed his conclusions in the formula $V=p/n$, where V is the velocity of the moving water, p the difference in the pressure at the two ends of the column and n the length of the column.

If this reasoning be applied to ordinary conditions in a level tiled field, p will be the distance from the highest point on the water table to the water in the drain, and n will be the horizontal distance from this same point to the drain, or one-half the distance between the laterals. The quantity of the flow to the drain will be V times the area of the open space in the column.

If two drainage systems with the tile lines spaced thirty inches and sixty inches apart and of the same depth, are constructed in the same field where all soil conditions are constant, the flow from the first system will be just twice that from the second. The second system with the sixty inches spacing will drain twice as much area per unit of length of drain as the first system and will have only one-half as large a rate of flow. In other words, if the system with the 30 inches spacing will remove a one-fourth inch depth of water in twenty-four hours, the system with the sixty inches spacing will require four days to remove this same unit amount or will remove only one-sixteenth inch depth in twenty-four hours.

If these principles be stated in terms of run-off, they mean that the rate of run-off, expressed as second-feet of discharge, will vary inversely as the ratio of the distance between the lines of tile, other things being equal. Or, that the rate of run-off, expressed as the depth in inches removed in twenty-four hours from the area drained by the system with laterals thirty inches apart will be four times as large as the rate from the same area drained by a system with laterals at the same depth but spaced sixty inches apart.

If two systems with the same spacing of laterals be constructed in the same kind of soil, but at depths of three feet and four feet, the rate of run-off from the system which has its laterals four feet deep will be just four-thirds of that from the system with the laterals three feet deep.

These principles are worthy of careful attention in the design of under-drainage system. Any decrease in the distances between the laterals should be accompanied by an increase in the capacity of the drains; a decrease in the spacing will also cause a decrease in the time necessary to remove a given amount of water. This should be given particular attention in the design of drainage systems for lands which are to be used for truck crops or for crops which are easily "drowned out."

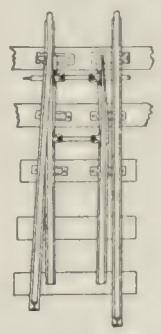
Bricklayers Hold Banquet in Continuous Kiln.

In celebration of the opening of the plant of the International Brick Company, at El Paso, Texas, on May 23, the bricklayers' union, which is financing and operating this enterprise, tendered a banquet to local craftsmen of other trades.

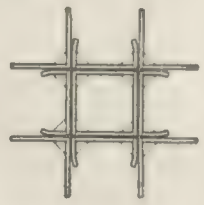
The banquet hall was in one of the large continuous kilns which will be in operation in about a week. Several improvised tables were set up in the kiln around which the guests were seated to partake of the repast and hear the after-dinner speakers.

The actual construction of the plant was started last January and has been going on ever since, only fourteen days being lost in that time by the contractor's forces.

TRACK EQUIPMENT



Frogs, Switches,
Switch Stands,
Portable Track.

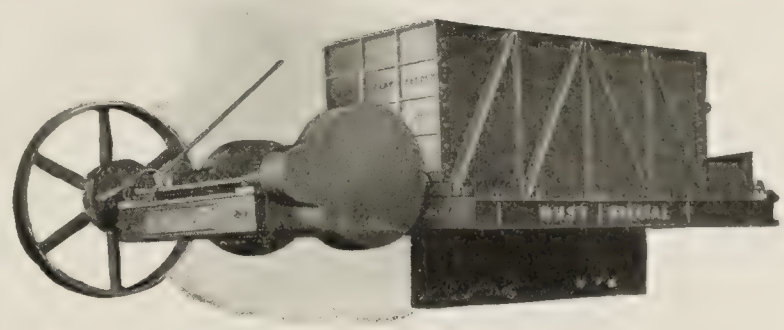


Any kind of Track Equipment Standard or Special—

Shipped the Day You Want It

The Cincinnati Frog & Switch Co.
Cincinnati, Ohio

Use the RUST SPECIAL CLAY FEEDER For EFFICIENCY and ECONOMY. Write for our Catalog of other labor and money saving equipment.



Marion Machine, Foundry & Supply Co.
Box 395, MARION, IND.

Link-Belt Silent Chain
The modern method of transmitting power

from prime mover to machine, or from line shaft to counter shaft. It shows the highest sustained efficiency of all mediums for the transmission of power (98.2% on actual test). It is as flexible as a belt—as positive as a gear and is more efficient than either.

Write for Silent Chain Data Book No. 125 or send for a Link-Belt Service Man



LINK-BELT COMPANY
Philadelphia Chicago
Indianapolis

Porto Rico and Latin-America
MAILING LISTS

A TRADE DISCOVERY!!! It pays to use them freely. Here is what one of our customers says: *"Mailed fifty letters to Porto Rico and got 45 replies, of which 37 resulted in sales. Mailed one hundred same letters to prospects here in the U. S. and received about 13 replies and No sale!!! You have a TRADE DISCOVERY, indeed."* Ask for particulars and our list containing hundreds of different classifications of Porto Rico and Latin-America mailing lists. Specify your wants, please.

THE MAIL ORDER CO. Box 148
San German, Porto Rico
Reference: Bank de Economias, San German K-45

"Clinton" Brick and Mortar Colors

Unusually strong in pigment. Positively warranted not to wash out, "streak," or fade. Recognized everywhere as the standard of Brick and Mortar Colors.

Insist on seeing this label

Full particulars and prices gladly furnished.

Insist on the genuine "Clinton" colors made only by

Clinton Metallic Paint Co. Clinton, N. Y.
P. O. BOX 38

CARS

Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

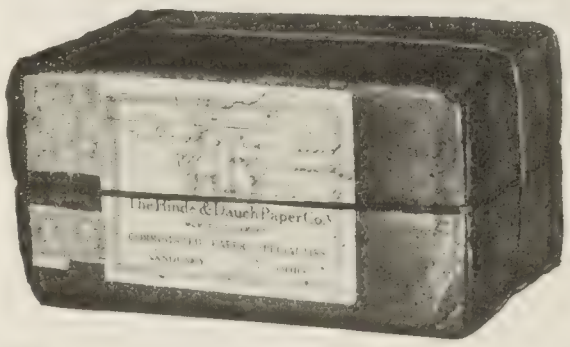
We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

CARS CARS

Pettigrew Foundry Co.
Harvey - - Illinois

CARS

IT'S ALL IN THE CONTAINER



You may select your sample brick with the greatest care, but **unless you pack them with equal care,** your pains will be for nothing.

We can show you how to do it quickly but thoroughly and at small cost.

The Hinde & Dauch Paper Co.
SANDUSKY, OHIO

Continued in next issue



THE IMPORTANCE OF DRAFT CONTROL IN BURNING

Cannot be overestimated. For many years we have made the

Best Draft Gages for Kilns.

The Ceramic Supply & Construction Co.
COLUMBUS - - OHIO



ITALY HAVING JOINED the allies, the danger of this country's becoming involved in Europe's turmoil becomes more and more remote. Prior to the final decision of the new member of the "entente," some uneasiness was felt here, particularly as no answer had been received to President Wilson's letter of protest that followed the sinking of the *Lusitania*. Yet if any proof were needed to convince the "Doubting Thomases" of American business that the commercial stability of this United States was well grounded, it was given during the time that elapsed after the news of the *Lusitania's* being torpedoed reached our shores, to the date when Italy made up its mind to declare war against its former allies.

With the exception of an erratic stock market, "business as usual" marked the busy marts of trade. The orders for war munitions continue to flow in a stream that is both broad and deep, and the golden flood extends beyond the factories that have accepted the orders to those which, in turn, must make these factories ready to cope with the immense business increase.

A few weeks ago, a Chicago manufacturer of metal specialties was offered a big contract to make shrapnel shells for the British government. To accept the order it would have been necessary for him to refit his plant with special automatic machinery, requiring an investment of more than $25,000. He was told that the contract would be so large that he could afford to buy the special machinery, even if it should be necessary to "scrap" it when the war was over. The expert who was acting as purchasing agent for the European buyer took the Chicago man to one of Chicago's greatest banks, and convinced him that the credit necessary to pay for the entire order of shrapnel shells was already arranged. So, finally, a preliminary agreement was signed.

The Chicago man left at once for the east and went to the plant where the special machinery for shrapnel is made, to place his order and arrange for immediate delivery. He was promptly told that though the factory was working night and day, so much of its machinery has already been ordered that it would be at least four months before a single punch press or special lathe could be delivered to him. Inquiries of other manufacturers resulted in the same way.

Since quick shipment of the completed shrapnel shells was demanded he was obliged to decline the contract.

This may be taken as a single indication of the enormous contracts for munitions of war which have and are being placed in the United States by the warring powers of Europe.

One of the two largest corporations making high explosives in this country has just announced officially that it has signed

contracts calling for payments of $22,000,000 for smokeless powder, gun cotton, etc., to be delivered before the last of the year, and it is now completing nine new plants for the manufacture of high explosives in various parts of the United States. Its chief competitor, an even larger company, is giving out no figures, but its great plants are said to be working night and day and announcements are frequent that large additions are being made to its various mills.

The first corporation mentioned is also negotiating for further contracts covering all the high explosives it will be able to turn out during the year 1916, which would indicate that the warring powers are not looking for an early end of the war.

It is noteworthy that when one of these war contracts is signed, at least 25 per cent of the full price is deposited in cash as a guarantee of prompt payment.

Among the largest contracts for munitions of war which have been recently announced is one for $65,000,000 worth of shrapnel, said to have been placed with the American Locomotive Company by the British government last month. One-half of this great order will be made by the company making the contract, the rest being divided between the New York Air Brake Company and the Westinghouse Air Brake Company.

At about the same time an order for 1,000,000 rifles at a price of $27.50 each was announced as being placed with the Westinghouse Electric and Manufacturing Company. The fact that the price quoted was much higher than normal was explained on the assumption that the contract would require large additions to the plant and equipment of the company.

Other huge contracts for weapons and ammunitions are reported as placed with the Bethlehem Steel Company and the Robin Hood Ammunition Company of Vermont. In fact, it may be set down as certain that practically every plant which is equipped for their manufacture has been at least offered contracts by one or more of the European countries.

The city of Kenosha, Wis., is several thousands of miles away from the farthest echo of the great guns along the firing line in Europe. But daily and nightly Kenosha is none the less stirred by the war.

The Jeffery Automobile Company, for instance, which has a contract for a thousand motor trucks and armored cars for the French government, is working more than 3,500 men days, nights, and Sundays in the effort to give prompt deliveries. Because of the tremendous rush some of the department heads are said to be putting in eighteen hours a day on the job.

The trucks are both heavy and light and are all built with the four wheel drive. A smaller number of armored cars are also being turned out. These have a steel turret mounted on the body and the three layers of hard and soft steel, welded together, are said to afford complete protection from rifle fire.

So great is the hurry that a whole train load of the completed trucks was recently sent to New York by express, being delivered at the docks ready for shipment in forty-six hours.

Charles Jeffery of the company, on his way to Europe to get new orders, was one of the few passengers rescued from the *Lusitania*.

A hosiery mill in Kenosha is also said to be working night and day to fill a contract calling for thousands of dozens of socks for the French soldiers in the trenches. Tanners in the Wisconsin city are also rushing work on leather under specifications from the French war office.

Next to great guns, rifles, and explosives, the largest war orders in the United States have been placed for motor

Good Belt Service Began When Cling-Surface Was Used



in this factory: Jersey Cereal Food Co., Cereal, Pa. Mr. R. J. Foster, Gen. Mgr. writes:

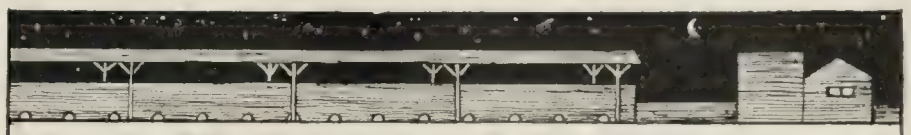
"The motor belt slipped before Cling-Surface came, but not since. The 8-inch belt formerly gave much trouble. Cling-Surface is the best thing we ever used. Results are sure all the time."

Cling-Surface invariably helps a belt driving violently fluctuating load as on gas engines, air compressors, motors, etc.

The first trial will convince you that Cling-Surface is **needed.** Write your trial order now or at least get our literature.

Cling-Surface Co

1029 Niagara St **Buffalo N Y**





It connects the Night and Day

In the long hours of the quiet night
THINGS will HAPPEN

A Hardinge Watchman's Clock

helps the burner and the watchman

It is a Ticking Conscience

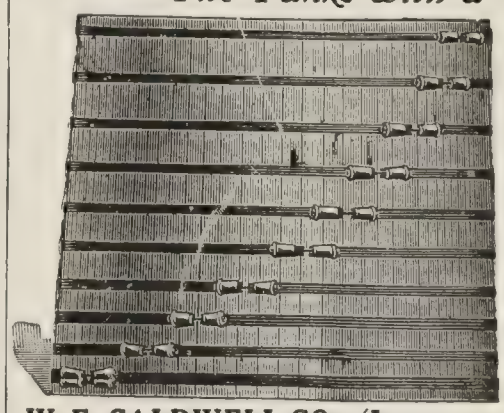
ur Booklet tells. Complete System, **$36**

Hardinge Bros., Inc.
1760 Berteau Ave., Chicago

Approved and labeled by National Board of Fire Underwriters



"The Tanks with a Reputation"



The construction of

Caldwell Cypress Tank

is based upon scientific and conservative engineering principles that eliminate every point of weakness found in ordinary tanks.

The proven durability of the tank material, the scientific hooping and the expert construction, all combine to make the Caldwell Tank wear, last and give satisfaction. Get our illustrated catalogue before buying.

W. E. CALDWELL CO., (Incorporated), LOUISVILLE, KY.

Tanks { Steel-Wood / Galvanized } Towers
Wind Mills - Pumps - Gas Engines

Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY
1229 Insurance Exchange Bldg., Chicago

WE CAN MAKE
PROMPT SHIPMENTS
OF
DU PONT
EXPLOSIVES
AND BLASTING SUPPLIES

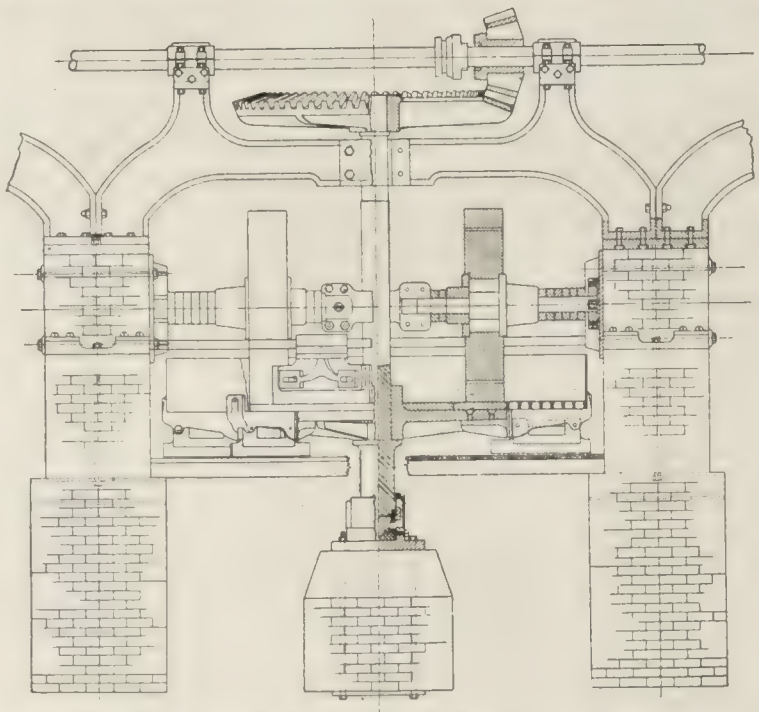
DESPITE the present demands for explosives, our facilities for securing materials, the operation of extensive powder plants equipped with special machinery and expert employes, and ample storage and shipping arrangements enable us to promptly and satisfactorily fill all orders.

Over a century's experience in the explosive field gives us a practical knowledge of its requirements. The superiority of our products is recognized by world-wide demands.

Specify DU PONT when purchasing explosives and blasting supplies, and be assured of prompt shipments, uniform quality and maximum efficiency.

DU PONT POWDER COMPANY
Established 1802 Wilmington, Del.

The "Means" Standard 10-Foot Dry Pan



We can refer you to brick makers who have been using the "Means" Dry Pan for over ten years constantly, where the "Step" and "Toe" have never had to be replaced.
Let us send you drawings and detail description that will help you to understand why "Means" pans give such remarkable service.
We also make 8 and 9-foot pans and a complete line of clayworking machinery and repair parts.

The Toronto Foundry & Machine Co.
Toronto, Ohio
We Make Those Famous "INVINCIBLE" Brick Barrows

trucks, horses, mules, saddles, harness, shoes and socks—all of which may be classified as transportation material.

In the early months of the war, when the foreign purchasing commissions were first sent to the United States, a lot of rot was printed on the subject. Simple inquiries were turned into positive orders and a cipher or two frequently added to the real figures. But it is a fact that an enormous number of motor trucks, horses, etc., have been purchased here and the number is increasing as the factories perfect their facilities and the demand grows greater on the other side.

So severe are the war demands on the strength both of machines and animals that the working life of either along the battle line is likely to be only a few weeks or months, at the best, even if they escape instant destruction. So every time an additional 100,000 men are put on the battle line the instant call is for more motor trucks and draft animals.

The official figures of the United States government show that in March last motor trucks to the value of $5,000,000 were sent to Europe. In March, 1914, the total value of the trucks exported was $63,000. Since the war began Europe has bought our trucks to the value of about $16,000,000 and with each month the number delivered and the value enormously increases.

More than a score of factories are now working on huge rush orders of trucks for England, France, and Russia. The General Motors Company, the Studebaker, and the Maxwell are three corporations which are said to have signed big contracts, as reflected by large rises in their stocks.

The Morton Truck and Tractor Company, of Harrisburg, Pa., has started work on an order for $1,200,000 worth of heavy trucks for the Russian government and has engaged the capacity of several factories to help them turn out this and other orders which are under negotiation. Reports from Detroit are that what with the domestic market and the new demand for trucks from Europe, almost all the factories, both of complete cars and of parts, are working full time, while some of them have night crews at work and are building great additions to their plants.

It is interesting to note that the big automobile plant of the Stevens-Duryea Company at Springfield, Mass., which has been shut down for some time, has just been sold to the Westinghouse Electric Company, which will use it for the manufacture of rifles for the European armies. When this plant gets to running at full speed 8,000 men will be employed.

Every man who has made a study of financial conditions, and their effect upon the price and sale of the rougher clay products, as brick and hollow tile, knows that the moment money is scarce, building operations begin to grow measurably less. When money eases up, building operations go ahead—that is about all there is to it.

The immediate effect of this great pouring in of European money is being reflected in the plan filings, which, from reports received covering the first half of May (from ninety-nine cities) show a total expenditure planned for building construction of $28,000,000. During the first two weeks of April, the same cities reported $22,000,000—a tidy increase of $6,000,000—or more than 20 per cent.

When the totals shall have been registered for May, it is expected that the first five months of 1915 will show a greater value in projected buildings than the first five months of 1914—and it must be remembered that the war scare did not come until late in June, in 1914. That is, 1914 promised to be a "banner year," up to the first

of July. Now, 1915 is beating the 1914 figures, upon which that promise was based.

To go back to "war talk"—for now, the ancient phrase "Don't Talk War—Talk Business" has been changed to "When You Talk War, You Talk Business"—it is believed that the entrance of Italy into the conflict foreshadows an earlier termination of the struggle than would have been the case had Rome maintained its neutrality. It means more loans, more money poured into this country for war munitions, more busy factories, more mill construction, more home building, and, because of increased municipal and state ratables, more brick roads and more public buildings. On the day this is written, more than $7,000,000 in gold came in to pay for war supplies and to back up foreign credit. Still more was in the process of transfer to float the war legions of Italy. The war loans, up to May 1, stood as follows:

Great Britain	$2,525,000,000
France	1,802,400,000
Russia	1,065,000,000
Germany	3,491,000,000
Austria-Hungary	730,000,000
	$9,613,400,000

This goes so far beyond any credit operations known before that it would be very interesting to know just how it has been accomplished. Where have these funds been found, and how much more can be had in the same quarters or by the same means?

There are only three sources from which they have been forthcoming: current savings, sales of securities in foreign markets and the pyramiding of credit, meaning by the latter, the pledging of private or corporate credit as a basis for government credit. The public capital flotations on the London market for the first quarter of 1914 aggregated $485,000,000, but this amount was exceptionally large, the average for the first quarter in the ten years ending with 1914 being about $300,000,000, or at the rate of about $1,200,000,000 per year. In addition to the public subscriptions, considerable sums of British income have been invested in this country by direct purchases or loans and, of course, there has been an important volume of direct investment at home.

The annual savings of Great Britain in recent years have been calculated at about $2,000,000,000. During the first quarter of 1915 the floations on the London market for other than war purposes were less than $10,000,000.

Investments abroad have practically ceased and there has been a considerable liquidation and conversion of such investments. Furthermore construction work in England is practically suspended, except in connection with the war industries, so that nearly all savings may be assumed to be available for investment in the war issues. As to whether individual savings are greater or less than in times of peace, is a question. The population is now more fully employed than in peace. The rates of pay and probably of profits are higher than usual; some people at least, are practicing unusual economics and while there is another side to it all, it may be that the aggregate savings are larger than usual.

Of course, if true, this would not mean that England was getting richer by means of the war, but merely that something was being saved out of the war expenditures. This may later be available for buying peace materials here that formerly were made and bought abroad.

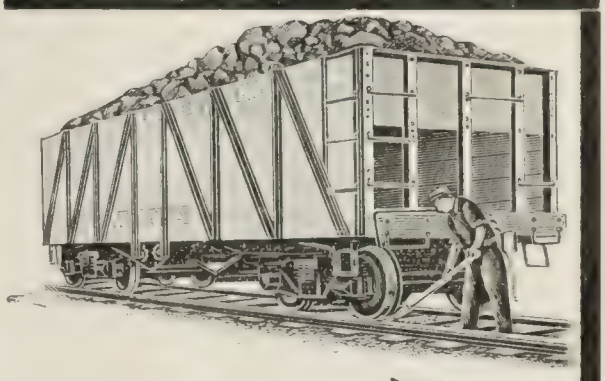
Less information is available about the other belligerent nations, but it is doubtless true that trade and industry have been more disturbed with them than in England. A very important part of France has been put out of business and prac-

How Much Does It Cost You To Move Your Cars?

More, perhaps, than you can calculate because no one has ever stopped to figure it out for you. This is one of the seemingly little items of expense that cut down your profits and make you wonder why you didn't make more money.

But you can change all this if you'll spend just $4.00.

The IDEAL Car Mover



and **one man** will move a loaded car with ease and save you many times its cost during the year.

Send for one on trial. Send it back if you don't want it.

We specialize in clay plant equipment, including elevators, screens, cars, track, switches, etc.

Write today for our Catalog

H. B. SACKETT SCREEN & CHUTE CO.

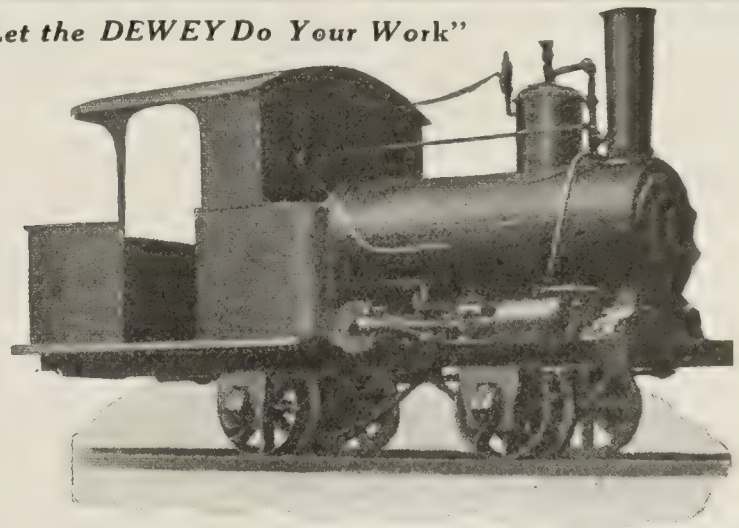
SACKETT 1685 ELSTON AVE CHICAGO

1681 Elston Ave., Chicago

Branch Warehouse:
191 Medford Street, Charlestown, Mass .

SACKETT 1685 ELSTON AVE CHICAGO

"Let the DEWEY Do Your Work"



The Boiler of the DEWEY

The Borden Brick & Tile Co., Goldsboro, N. C., is using a DEWEY locomotive. It discarded the mule-driven car and declares it not only got an increased efficiency but reduced the cost of hauling.

This concern hauls eighteen cubic yards of clay to a load on a trip of one and a half miles.

How many mules would it take to do this same thing and how long would it take them to do it?

It is our own special design. It has unusually large capacity, is a quick steamer, and is economical in fuel consumption.

These three characteristics have made the DEWEY especially adapted to clay pit work.

Strong, Safe, Long-Lived

The DEWEY boiler is designed to reduce to a minimum the numerous angles and corners and pockets which serve as collecting places for mud and scale—distressing features about every standard locomotive boiler.

The DEWEY boiler, therefore, is stronger, safer and longer-lived and does BETTER work than the regular types.

The DEWEY sells for several hundred dollars less than any of the standard type locomotives of the same size and weight..... **$1200**

DEWEY BROS.
Goldsboro, N.C.

"NUGGET"

Bearing Metal

Guaranteed most **Economical** and **Efficient** for clay working machinery.

Its hardness assures great wear resistance.

Its high compressive strength enables it to withstand heavy duty.

Why not let us prove it?

15 cents per pound, delivered.

Manufactured Solely by

The Cleveland Alloys Co.

Bearing Metal Experts

CLEVELAND - - - OHIO

FITS YOUR LADLES

LEHIGH PORTLAND CEMENT CO.
LEHIGH
ALLENTOWN, PA. - CHICAGO, ILL.

Don't Take the Risk

If you make a good brick, why endanger its reputation by permitting the use of an inferior cement? Good brick should be set in good mortar and GOOD mortar is made of *good* cement.

A paving block doesn't get a fair chance if imbedded in poor concrete or set in an uncertain cement.

Lehigh Cement Is Dependable

Its mixture is uniform—high in strength—the same in color and fineness, and helps make permanent buildings and ever-lasting pavements.

LEHIGH CEMENT

tically all of Italy will likewise be hampered in business. Germany has been the largest sufferer.

The diversion of business from the usual lines to the production of war supplies, has released a large amount of liquid capital ordinarily employed in financing trade, and enabled it to be diverted to government finance. In other words, since the governments have become the principal purchasers in the markets trade is being largely financed by the credits created by the governments.

Practically 33⅓ per cent of the money being spent for war supplies has been spent here. With Italy, the principal neutral European sea side country embroiled, perhaps half the money being appropriated for war supplies will be spent here, so that if American clay producers have been the indirect beneficiaries from the expenditure of billions of war money, the prosperity here will continue, rather than diminish.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

The Clay Products Company of America has been organized at Fairhope, Ala., and will develop clay lands near Clay City for the manufacture of brick, tile, terra-cotta, fire-brick and roofing tile.

CALIFORNIA

Plans have been adopted for sewer extensions in Oakland, San Mateo and Santa Cruz, Cal.

The citizens of Rodeo, Cal., have voted to issue bonds to the amount of $17,000 for the installation of a new sewer system.

Sacramento, Cal., has recently let a large sewer job and is now in the market for material for additional sewers.

Large floor tile contracts have been let for the new Academy of Sciences, in San Francisco, to Mangrum and Otter and to the American Marble and Mosaic Company.

Preliminary plans for the new eight-story building to be erected by the Sharon Estate at Mission and New Montgomery Streets, San Francisco, Cal., call for a large amount of brick and terra-cotta for the exterior.

The Godfrey-Ruller Company of Oakland, Cal., has secured a factory site on Glascock Avenue in that city on the tidal canal, where it will build a plant for the manufacture of paving-brick.

H. H. Larson and Brother, of San Francisco, have secured a contract for the brick and terra-cotta in the new seven-story building for the Merchants' Ice and Cold Storage Company.

The Southern Pacific Company has been granted an extension of time in which to comply with the California Railroad Commission's order regarding new rates on clay and clay products as asked for by the Steiger Terra Cotta and Pottery Works and other brick and pottery manufacturers.

The Denison Block Company, Sacramento, Cal., has just completed a large display in the Palace of Machin-

ery at the Panama-Pacific Exposition. The walls of the exhibit booth are lined with the output of the Sacramento plant, including tile, face-brick, etc. The display is well located and has attracted considerable attention.

The foreign section of the Palace of Liberal Arts at the Panama-Pacific International Exposition, San Francisco, Cal., contains several interesting brick and tile displays which should be of interest to visiting brick manufacturers and dealers. In the Netherlands section the chief display is that of the Brick Works, Ltd., of Geldermachen, Holland. This company is displaying brick and tile in a number of varieties. The Republic of Uruguay has completed its exhibit in this building, the display including a good showing of hollow tile and an extensive display of sand-lime brick, the latter being from the works of the Compania de Materials de Construction, Montevideo, Uruguay. The German, British and some other foreign displays in the Palace of Liberal Arts are still incomplete; other interesting showings of clay work may, no doubt, be found in these later.

COLORADO

The Denver Shale Brick Company, Arvada, Colo., after a preliminary cleaning and overhauling of its equipment, has begun the manufacture of brick for the summer season. When operating to capacity, the plant has a daily output of 40,000 brick, and it is announced that this capacity will be maintained during the next four or five months.

The Boulder Pressed Brick Company, Boulder, Colo., has substantially increased its working force to take care of a large number of orders which are coming from neighboring towns. The company started operations for the season much earlier this year due to an increased building activity and consequently a greater demand for its product, and indications point to a constant demand throughout the summer and fall. The company is also experimenting with the manufacture of vitrified paving brick, and if successful, will greatly increase its volume of business.

CONNECTICUT

Changes are being made in the route of the clay hauling railway at the yard of the Richard B. Murray Brick Company, New Britain, Conn., with a view of securing greater efficiency. Brickmaking at this plant has been resumed for the summer season.

DISTRICT OF COLUMBIA

While no large brick contracts have been reported in Washington, D. C., for the past two weeks, all of the local companies seem to be keeping busy on small jobs.

The Washington offices of both the Hydraulic-Press Brick Company and the Virginia Brick Company report a good business. No large contracts, however, have been secured recently.

The Washington Silicate Brick Company reports that it is now experimenting with the making of sand-lime red face-brick of good quality. This company has always manufactured white face-brick, as well as common-brick and the red face-brick is a new venture. About 300,000 face-brick for the new gymnasium at the Washington and Lee University, Lexington, Va., was furnished by this company which reports business as being good.

It is rumored that the Melton Construction Company, which has just received the contract for erecting the new $125,000 Park View School, Washington, D. C., is to ask for bids on the face-brick. According to the original

Less Machine Vibrations

Nuttall Cut Gears for Clay Working Machinery will help to eliminate your machine vibrations—Thus decreasing the number of **Rejections.**

Address

Nuttall - Pittsburgh

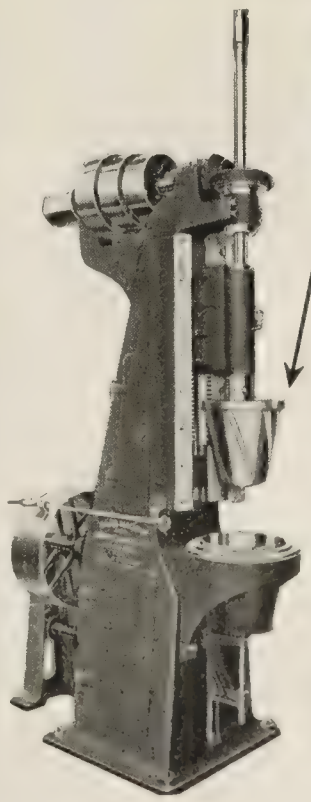
Why Don't You Make Flower Pots



It's a big field with very little competition, and it makes a profitable side line for any plant making brick or tile products.

Start right by adopting the

Baird Flower Pot Machine



Simple in operation, accurate in its work, and from six to ten times as rapid as old methods.

Send us a sample of your clay—we'll show you what our machine will do for you, and send you full information.

Baird Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.



Type B—¾ cu. yd. Erie Shovel.

The object:

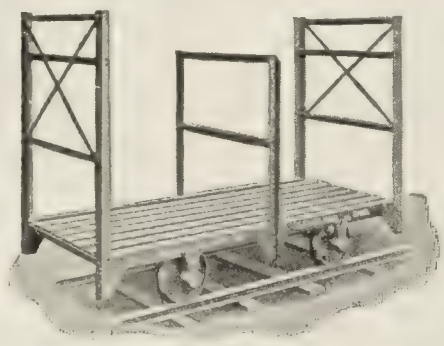
To Build a Better Shovel

We know just as well as you know that it would be to no good purpose to put another shovel on the market and have it merely "just as good." To justify its existence it had to be better.

And the ERIE Shovel is better—in many ways.

All we want to do is to get you to say: "Well, I am going to investigate the ERIE." The opportunity to show you how and why the Erie is the "better" shovel you have been looking for is all we ask. Catalog A gives the facts and figures—where shall we send your copy?

BALL ENGINE CO., - Erie, Pa.



No. 1205
Triple Deck Dryer Car supplied with or without decks of wood or steel.

Reduce Your Handling Costs

by the Purchase of Efficient Equipment



Rocker Side Dump Car
Also made in end dump. Above car made for loading with steam shovel.

ATLAS High Efficiency Cars and Electric Locomotives



No. 5730
Storage Battery Locomotive. One end operated.

will meet your requirements.

Let us send you catalogue and quote prices.

The Atlas Car & Mfg. Co.

Dept. I
1287 Marquette Road, Cleveland, Ohio

specifications, the Occaquan workhouse was to furnish the common-brick of which there are to be 1,500,000, and further, it was specified, that nothing but common-brick was to be used on the exterior. It is reported that, although the Occaquan workhouse is turning out 60,000 brick a day, it cannot keep up with the demands of the district government. The workhouse is still furnishing brick for the new $1,500,000 Central High School as well as the new $750,000 colored high school. The matter of taking bids on face-brick is now up with the District Commissioners.

GEORGIA

The Vitreous Clay Company, of Atlanta, Ga., has been incorporated with a capital stock of $47,000, to manufacture brick, sewer pipe, etc.

ILLINOIS

The Galena Tile Roofing Company, Galena, Ill., has been incorporated by William Stacey, Jacob F. Meffley and James F. Furlong, with a capital stock of $5,000.

Rapp Brothers, a pottery and tile manufacturing concern at Morton, Ill., has undergone a reorganization, Andrew, Barthol, Christian, John, Samuel and Matthew Rapp being succeeded by George, Samuel W., William and Daniel Rapp. Instead of buying its electric power from an outside company, a steam engine and generator have been installed at the plant and in the future the company will generate its own electric power.

INDIANA

The Indiana Reformatory at Jeffersonville, Ind., across the river from Louisville, has its brick machinery installed and has begun operations with convict labor. The yard is located on state land, the clay being secured at the same point. The intention of the reformatory management is only to make sufficient brick for building a high wall around a part of the reformatory, and for the erection of a new building. None of the products of the plant will be sold.

IOWA

The brick and tile plant at Belle Plaine, Ia., which changed ownership several months ago, and which is now known as the Buckeye Clay Products Company, has resumed operations at its plant after being closed for several months.

KANSAS

A. R. Young and Company, Lawrence, Kan., has received a contract for 41,000 square yards of brick paving at Alexandria, La.

The Pittsburgh Paving Brick Company, Pittsburgh, Kan., is furnishing 1,000,000 brick for paving work at Topeka, Kan. Shipments began on this large order the latter part of May.

The Kansas Buff Brick Company, Coffeyville, Kan., recently supplied 2,000 face-brick for the Coco Cola building, Kansas City, Mo. The company has also supplied the brick for the interior decoration of Samuel Murray's new floral shop at 1017 Grand avenue, Kansas City.

The Ottawa Brick and Tile Company, Ottawa, Kan., is trying to find out if there is gas under Ottawa at a depth of 2,000 ft. A prospecting well is being drilled near the brick plant just north of the town. Several attempts have already been made to locate gas under Ottawa, but each time the project was abandoned. The well known gas fields of Franklin county are near Rantoul in the

eastern part of the county, and most of them are only 600 ft. deep.

KENTUCKY

Spradlin and Son, of Hickman, Ky., are the successful contractors for a two-story brick building for the Elks at Union City, Tenn., the cost of which will be $8,500.

It is noted with considerable interest that there is a growing sentiment in and about Louisville, Ky., among home owners in favor of brick and tile paved terraces.

W. J. Spradlin, of Fulton, Ky., has been awarded the contract to build the county court house at Benton, Ky., at a cost of $22,000. Fireproofing will be used on the first floor of this building.

The plant of the Coral Ridge Clay Products Company, Louisville, Ky., is running on a full time basis, according to George H. Fiedler, general manager of the company. Deliveries are being made constantly to several local jobs which are under construction.

The plant of the Louisville (Ky.) Brick Company, at Thirty-eighth and Rudd streets, is working on a full time basis. A. P. McDonald, sales manager of the company, is off on a trip through the central part of the state, signing up orders at Lexington, Frankfort, Cynthiana and Versailles.

Brick pavements for the smaller cities are getting to be exceedingly popular in Kentucky. Winchester, for some time, has had an extensive amount of brick paving, and now Richmond, a rival city to the south of Winchester, has voted to similarly pave the main thoroughfares of its business section.

P. Bannon, Jr., secretary and treasurer of the P. Bannon Pipe Company, Louisville, reports that business is good in all lines and that they have no complaints to make. The company is delivering large quantities of hollow tile to the several school jobs, which are progressing rapidly. Building brick and the sewer pipe lines are also moving.

Hawesville, Ky., is very much interested in the prospects of an establishment there of a large tile manufacturing plant, to work the deposit of clay on what is known locally as the "old Hawes lease." For three months or more L. S. Powers has had a crew of men opening up the clay and the coal on this lease, having uncovered the clay in a number of places to determine the continuity of the deposit, which has been found to be of the highest quality and practically inexhaustible. The clay has been burned and the results are said to have been uniformly favorable.

The best job in prospect for the retailers of Louisville, Ky., is the Belknap School building, the contracts for which are to be let in the near future, the plans having been completed. This building will cost from $75,000 to $100,000, and is to be faced with brick.

The end of May found the brick manufacturers and dealers of Louisville, Ky., and vicinity doing business that can be considered maximum for the season. There is not a great deal of hope that any extensive building projects will develop before the close of the season. That new building projects are somewhat fewer than was hoped and that several have been postponed is now assured. The work already given out and that in prospect for the most part consists of small jobs. However, all the Kentucky plants are operating and the majority of them on full time.

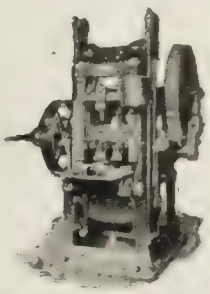
Business has been picking up with the Southern Brick and Tile Company, Louisville, Ky., orders from outlying points being numerous and satisfactory as to volume. T. Bishop, who has been handling tile work out in the state, is still doing some of that work in Mercer county, although

WHATEVER equipment you need—don't buy until you know something about the

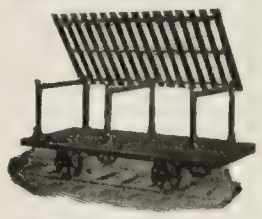
Lakewood Line



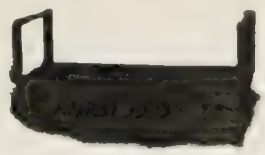
We Manufacture



Buckets, Kiln Bands, Pressed Steel Brick Pallets, Bearings, Portable Track, Ball Bearing Turntables, Switches, Richardson Double Die Steam Represses, also Miniature Hand Represses.



Cars of all kinds



Every piece of equipment is built of the best material by the best mechanics obtainable. The Lakewood Line is Built to Last.

Ask for Catalog No. 11

Lakewood Engineering Co.

Formerly the Ohio Ceramic Eng. Co. Cleveland, Ohio

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

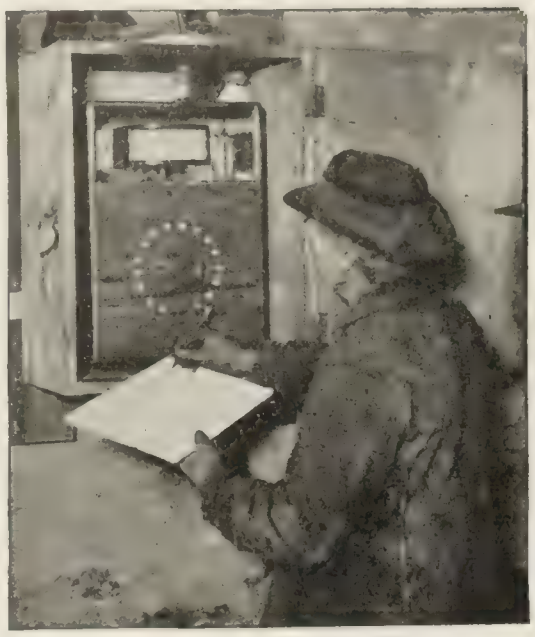
Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

Let The Burner Have A Thwing



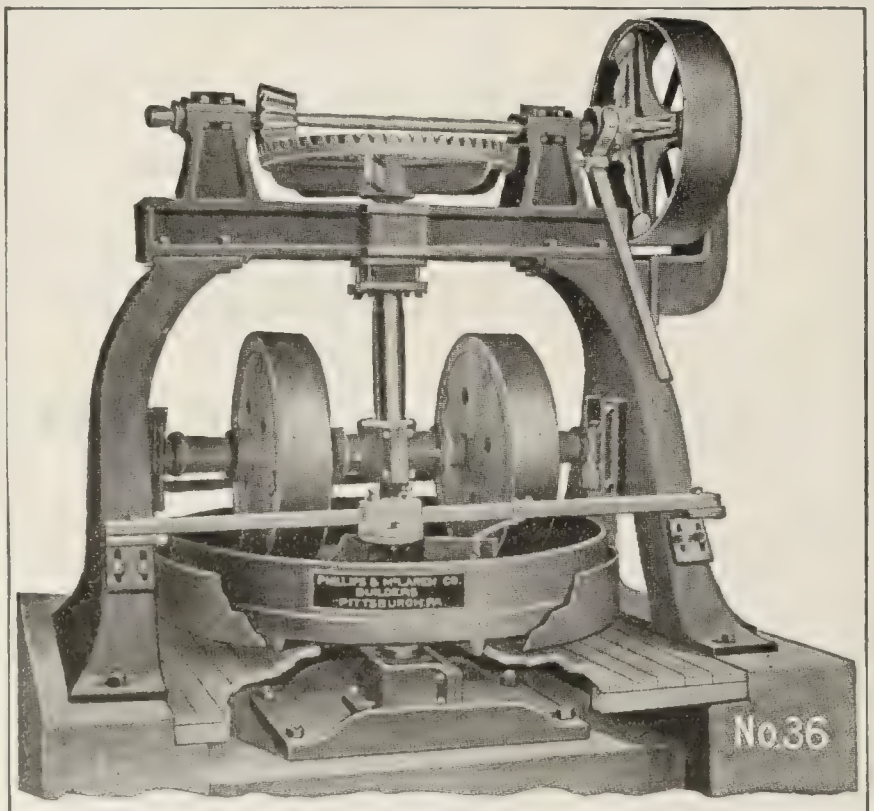
Indicating Pyrometer in his shed connected by a dial switch to one or more Thermo-couples in each kiln.

Then he will not need to be making excuses for poor firing and poorer product. With a knowledge of the temperature before him, he can control his firing and produce better ware with less fuel.

Write for Bulletin No. 7

Thwing Instrument Company

437 N. Fifth Street, Philadelphia, Pa.



PHILLIPS & McLAREN CO.

PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.

at this time the fields are practically all in crops. A week or so of exceedingly heavy and general rains recently has put the drainage systems installed by Mr. Bishop earlier in the year, to severe tests, and, judging by the reports received and the comments of those for whom the work was done, they are highly satisfactory. The company's plant is operating on full time.

MAINE

The Purinton Brothers Company, Augusta, Me., resumed work at its brick plant on May 15 with prospects of running to capacity throughout the entire season. The outlook for building this spring and summer in that part of the country is better than it has been for some time.

MARYLAND

The capital stock of the Hancock Shale Brick Company, Hagerstown, Md., has been increased from $30,000 to $40,000.

MICHIGAN

Arrangements are being made to resume operations at the brick plant controlled by the Turner estate in Norway township, Dickinson County, Mich. The management expects to employ about sixty men, who will make about 2,000,000 brick this summer.

All of the brick manufacturers of Detroit are operating on eastern standard time adopted by the city council on May 11 and becoming effective Monday, May 17. Under the new time, the factories open an hour earlier and close down an hour earlier, the idea being to give the employes one hour more of daylight at the end of the day.

The Fairview Brick Company, foot of St. Jean avenue, Fairview, a suburb of Detroit, was seriously damaged by fire on May 18, in fact, the plant was almost totally destroyed. The company had just been completing a new addition, which was also damaged by fire and water. The loss is estimated at $5,000.

It is announced by the Kalamazoo Tank and Silo Company, of Kalamazoo, Mich., that plans have been completed for the erection of a new building adjoining the present one on Harrison street. The building will be forty-four by seventy feet, four stories high and absolutely fireproof.

The McDonald Coal and Brick Company, Detroit, manufacturers and dealers in building brick, reports capacity business. "We are selling all of the brick that our factory can turn out and are keeping up to last year's standard," is the statement of J. C. McDonald. The company has no large contracts on hand, most of its brick going into residence work.

James W. Rollinson, resident manager of the Detroit, Mich., office of the National Fireproofing Company for four years, has been transferred to Chicago. He will be succeeded in Detroit by R. L. Stoddard, who has been connected with the local office for some time and is familiar with the territory, which includes the state of Michigan and Toledo, Ohio.

No city in the country of its size and population is building as many schools at the present time as Detroit, and all of them are of brick construction. Twelve are now being erected at a cost of more than $2,500,000, and appropriations were made during May for five more. For years the school equipment in Detroit has lagged behind requirements, but an effort is now being made to remedy this condition. All the brick used in these schools is furnished by Detroit manufacturers.

The transportation bureau of the Detroit (Mich.) Builders and Traders' Exchange in its annual report

makes the following statements regarding brick rates: "A scrutiny of rates on brick into the city of Detroit demonstrated that they were unfair and the attention of the carriers was called to the inconsistencies. The carriers disagreeing, it was thought best to appeal to the state railroad commission who suggested that action on our part be withheld until after the question of the general five per cent advance in rates was settled. This matter now having been disposed of, the question will again be taken up with the view of equalizing and correcting rates that we consider unfair. The individual cases taken up and upon which corrections were secured, will show a saving of approximately six to eight thousand dollars for the period January, 1914, to January, 1915, a saving having been effected of from four to six dollars per car."

MINNESOTA

At a recent meeting of the directors of the Minnesota Farmers' Brick and Tile Company, Austin, Minn., John H. Rahilly was elected secretary and William P. Rahilly, treasurer, to fill the vacancies caused by the resignation of W. H. Gleason and J. L. James, who held these respective offices. The Rahilly brothers have been connected with the company for the past two years, W. P. Rahilly being engaged as traveling salesman. New kilns will be erected at the plant at once to take care of an increasing number of orders. The company has orders for over five hundred carloads of its products now on its books, shipments being over one hundred per cent greater for the past six months than for any previous period of equal length. Besides a good business in drain tile, the company's rough-textured face-brick is enjoying a good demand for local work.

MISSOURI

J. C. Calhoun, president of the Calhoun Mantel and Tile Company, Kansas City, Mo., has returned to the city after spending four months in California.

The Wakefield Mantel and Tile Company, Kansas City, reports business from towns of Missouri and Kansas as being very near normal.

The tile work for the tea room of the new Campbell bakery at Thirtieth and Troost streets, Kansas City, will probably be contracted for late this month. The cost of this work, it is figured, will be about $500.

The Mississippi Glass Company has divided its business and the brick plant which the company formerly operated at Vandalia, Mo., is now owned by the Wash Fire Brick Products Company of which Julius Wash, St. Louis, is president. The plant at present is running full time, employing a large number of men.

The National Terra Cotta Company, Kansas City, Mo., recently incorporated for $200,000, is reported to be doing well since its reorganization. Its production is averaging four hundred and fifty tons of finished products a month. The largest contract now being filled is for the English Lutheran Church, Troost Avenue and Mannheim Road, Kansas City.

NEW JERSEY

The Sneyd Enameled Brick Company, Trenton, N. J., has been incorporated with a capital stock of $100,000, by C. T. H. Phillips and C. H. Phillips, of that city, and R. J. Miller of Philadelphia, Pa.

The Pennsylvania Vitrified Brick Company, Camden, N. J., has been incorporated with a capital stock of $80,000, for the manufacture of brick. The offices of the new company are at 417 Market Street, Camden, and the



The Improved Hook Patent Up and Down Draft Kiln, Sullivan, Ind.

Be Sure You Get the Improved Hook Patent Up and Down Draft Kiln

***Sold Only by* The Ohio Kiln Co., Vigo, Ohio**

THE CLIMAX OF KILN CONSTRUCTION

30 ft. kilns of brick were burned in 82 hours, including water-smoking period, and no under-burned or over-burned ware.
30 ft. kilns of drain tile were burned in 55 hours from start to finish and all courses burned uniformly; smaller kilns in proportionately less time.

Direct heat applied at bottom and top of ware gives uniform temperature in all parts of the kiln. It reduces the fuel consumption to the minimum, lessens the time required to turn a kiln, and increases the output of first grade ware.

Can be installed in any kiln; round, rectangular; old or new, at moderate cost.

We Do What We Advertise. Write for Information.

Samples of your clay will be tested in our kilns free of charge under Mr. Hook's supervision.



$2.50 Per Day
A pleasant room with private bath, facing large open court. (Not one room, but one hundred of them.)

$3.00 Per Day
An excellent room, with private bath, facing Street. Southern exposure. (Not one room, but eighty-seven of them.)

Also attractive Room without Bath for **$1.50** per day. The Restaurant prices are most moderate.

Make Your Dollar Produce More in a New York City Hotel

Location

One minute from 5 of the largest department stores. Five minutes' walk from 19 principal theatres. Within a block of the Fifth Avenue shopping district. Every line of transportation passes the door. Fifth Avenue Bus lines and principal surface lines. The Hudson Tubes across the street. Elevated Railroad Station across the street. Subway Station three minutes away. Grand Central Station within seven minutes. Pennsylvania Railroad Station just one block away. **For convenience one could ask no more.**

The Hotel—600 Rooms, 400 Baths

EVERYTHING NEW AND MODERN. A FIVE MILLION DOLLAR HOTEL EQUIPPED TO SATISFY THE MOST EXACTING TASTE.

All Baggage Transferred Free to and from Pennsylvania Station.

THE HOTEL MARTINIQUE

On Broadway, 32nd to 33rd Streets, NEW YORK

Charles Leigh Taylor, President Walter Chandler, Jr., Manager
Walter S. Gilson, Vice-President



Gasoline Locomotive for Bach Brick Co.

Baldwin Gasoline Locomotives

are specially suitable for light switching service in and about brick-yards. They consume no fuel while standing, and are easily handled by one operator. A Baldwin gasoline locomotive has made a record of one year's service with a cost for repairs of less than $5.00.

A copy of Record No. 74, which contains further particulars, will be furnished on request.

The Baldwin Locomotive Works
Philadelphia, Pa., U. S. A.

Represented by

F. W. Weston, 50 Church Street, New York, N. Y.
Charles Riddell, 625 Railway Exchange, Chicago, Ill.
C. H. Peterson, 1610 Wright Building, St. Louis, Mo.
George F. Jones, 407 Travelers Building, Richmond, Va.
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.
Williams, Dimond & Co., 310 Sansome St., San Francisco, Cal.



DURO

Everlasting Clay Block Silos

will increase your sales and profits

Easy to Make
Easy to Sell

The Door-Frame Construction is a Marvel

It makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.

For a small royalty we will sell the right to use our patent device for this construction.

Why not write us about your territory?

Mowrystown Brick & Tile Co.
Mowrystown, Ohio

incorporators are F. R. Hansell, George H. D. Martin and John A. MacPeak.

NEW YORK

The plant of the Carey Brick Company, Newton Hook, N. Y., has reopened and is now engaged in making brick for the summer season.

The Dennings Point (N. Y.) Brick Company has opened the brickmaking season at that point on the Hudson by resuming operations at its old yard. Six machines and about a hundred men are busy turning out brick.

The Peekskill Fire Brick Works, Peekskill, N. Y., has been incorporated with a capital of $50,000 to manufacture fire-brick, stove linings, etc. K. A. Butterly, J. J. Butterly, and L. F. Crumb, of Peekskill are the incorporators.

The Allegany Valley Brick Company, East Olean, N. Y., has reopened its plants after being closed for the past two months. It is understood that this plant, which employs about twenty men, will be kept in operation for the remainder of the season.

NORTH CAROLINA

The Entermont China Clay Company, of Entermont, N. C., has been organized to develop china clay deposits. The capital stock of this company is placed at $25,000.

OHIO

Several extensive street paving contracts, in all of which brick produced by the Bessemer Limestone Company, of Youngstown, Ohio, will be used, have been let in that city, Mullen & Quinn securing most of the work.

The Wooster Shale Brick Company, Wooster, Ohio, will furnish 500,000 paving blocks for the improvement of Main Street in Jeromeville, Ohio. More than sixty cars will be required to deliver this order.

The Mt. Gilead Tile and Pottery Company, of Mt. Gilead, Ohio, is featuring its new hollow tile for building purposes, especially in the construction of buildings where fireproof construction is desired. The company is manufacturing a three-compartment tile, for which many advantages are claimed.

Boyd and Cook, of Dayton, Ohio, have been awarded the contract for the construction of about 15,000 feet of storm sewer in Piqua, a nearby city, including house connections, manholes and flush tanks, on a bid of $8,458. Most of the work calls for the use of clay products, either pipe or brick.

The Elyria Enameled Products Company, of Elyria, Ohio, has been incorporated for the purpose of manufacturing a wide variety of enameled goods. The capital stock authorized is $150,000. Charles E. Wilson, John Murbach, C. E. Blanchard, C. M. Braman and Theo. T. Robinson are interested.

The town of New Boston, Ohio, has made all arrangements for the installation of a storm and sanitary sewer system during this summer, which will cost in the neighbor hood of $50,000, and in the greater part of which vitrified clay pipe will be used. Engineer Harper has completed plans and specifications for the work, which have been approved by the council, and bonds were issued some time ago to defray the cost. Contracts will be let as soon as bids can be called for and received.

The Carlyle Paving Brick Company, one of the busy brick concerns in the vicinity of Portsmouth, Ohio, recently found it necessary to register a complaint with the city with reference to the charges made for its water

supply. It seems that the original rate made was based upon an estimated consumption of 40,000 gallons a day by the plant, at the rate of five cents a gallon. According to a meter installed to register the company's consumption, however, the average daily consumption has been only 16,687 gallons, considerably less than half what the company has been paying for.

The amount of business for plants involved in any considerable street paving job where brick are used is indicated by an estimate made by the city authorities at Washington, Ohio, recently, in connection with street improvements being planned for this summer. According to this estimate, sixty carloads of brick will be used, on which the freight alone will amount to $2,500. Most, if not all of the brick will come from Ohio concerns. Several of the city officials of Washington recently visited the plant and yards of the Athens (Ohio) Brick Company, enjoying a trip through them, but it is not understood that there is necessarily any business connection between this visit and the work projected by the city.

The Lincoln Paving Block Company, one of the new concerns in the Canton district, announces the opening of its new plant at Corning, Ohio, work on which has been progressing since last September. The new plant is modern in every respect, and will undoubtedly play an important part in the company's business, which promises to be excellent. The officers of the company are as follows: G. O. French, president; G. B. French, vice-president and treasurer; F. B. Mulford, secretary; W. S. Cunningham, sales manager. Both of the Messrs. French are associated with the Big Four Clay Company. Fires were lighted in the kilns of the new plant on May 15.

Good roads enthusiasts and business men generally in Cincinnati and Dayton, as well as other parts of Ohio through which it is hoped the proposed Dixie Highway will run, are using every possible means to facilitate the construction of links for use in the highway. The Dixie Highway is planned to be a north-and-south road, opening up a new channel of communication between the states on the north and south sides of the Ohio river. At Dayton the board of county commissioners has authorized the reconstruction with brick of what is known as Main Market Road No. 7, for its entire length in the county, about twenty miles, in order to be able to offer a first-class road for incorporation in the Dixie Highway. The work will be begun as soon as possible.

While indications are that by reason of the appeal in the injunction suit brought to prevent the McCaul Company from going ahead with the Cincinnati courthouse job, this particular piece of work will be delayed for some time, there is still something to do around the city, and prospects continue to improve. The letting of contracts on the new women's building of the University of Cincinnati, a $150,000 structure, by Architect A. L. Fechheimer, a few days ago, helped considerably. The David Hummel Building Company secured the largest single contract, which consisted of the brick, terra-cotta and hollow tile partition work, with the grading, excavation, masonry and cut stone, amounting in all to $40,500. Aside from this good sized job, smaller work continues to predominate.

OKLAHOMA

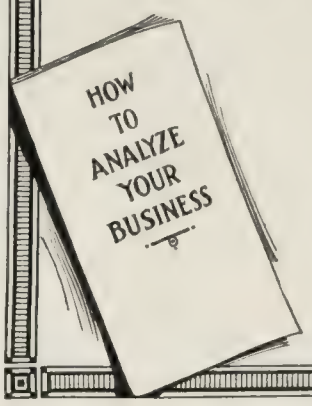
The Muskogee (Okla.) Vitrified Brick Company has reopened its brick plant, working a large force of men, after being closed since July of last year. An extraordinary demand for the company's product from Dallas, Houston and other Texas cities is responsible for this



"We Must Meet Conditions As They Exist Today"

Keen competition has forced quality and quantity production to combine with minimum manufacturing costs.

The higher cost of living and greater skill among workmen have made necessary **increased wages** which the manufacturer must meet **without reducing profits.**



Send for our booklet:
"HOW TO ANALYZE YOUR BUSINESS"
A series of sixty-six questions for determining your industrial efficiency and solvency.

L. V. Estes Incorporated
Engineers
McCormick Building, Chicago

CARBIDE PAINT

Heat Resistant---Fire Proof

It resists and retards the action of fire. No paint can make a wood surface absolutely fire-proof, but the application of Carbide Paint retards the fire sufficiently to give the fire-fighting apparatus time to get at work and save the building. THE PAINT FILAMENT ITSELF CANNOT BE DESTROYED BY FIRE.

It can be heated red on metal and white hot on brick. It is heat resisting, and proof against acid, gas, alkali and all chemical fumes. Will adhere to galvanized metal, tin and zinc. It is sanitary, and there is no paint material more durable.

Write for complete information.

E. R. STOWELL
Inventor and Patentee
ODEN, MICH.

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

Are you sick and tired of the kiln furnace that gums up every four hours or less with a ball of clinker?

Do you want to prevent the loss of 100° of heat each time clinker time comes?

Do you want to put one dollar's worth of heat into the kiln, from each dollar's worth of coal you buy?

Would you fire your boilers with the same kind of furnaces that you use on your kilns?

Basically—aren't they the same?

THINK—It is applied common-SENSE. Avoid spending so much money for coal.

Send for Bulletin B. It tells you how

CANTON GRATE CO.

1706 Woodland Ave., CANTON, OHIO

"The Woodhouse" Special Chain for Steam Shovels

LOOK AT THESE ILLUSTRATIONS and you'll instantly see why you will forget your chain troubles when you adopt the "WOODHOUSE."

Here is the chain as originally bought—



And here's the exact same links after 16 months of continuous service in heavy dredging.



Isn't this good evidence of the strength and durability of "Woodhouse" Chains, and why you should adopt our chains?

For these hand-made chains we use a special iron that must conform to a severe test—selected pure pig-iron, treble-worked and re-rolled.

Get our catalog and prices—also let us send you a book of testimonials that will convince you.

WOODHOUSE CHAIN WORKS

Trenton, New Jersey

renewable of activities. Out of its stock of brick on hand, the company has just completed a shipment of 400,000 to Houston where there is considerable building going on at this time. Since the shut-down of last summer, new equipment has been installed at the plant.

PENNSYLVANIA

William Conway, a brick manufacturer, of West Philadelphia, reports business as being very good, and declares it is his opinion that the present season will be very profitable to the local trade.

Announcement has been made to the effect that R. O. Cosler, formerly connected with the brick department of the D. J. Kennedy Company, of Pittsburgh, Pa., has become associated with the Hay-Walker Brick Company, as manager of its sales department.

William R. Chapman, president of the Philadelphia Brick Company, Twenty-fifth and Passayunk avenue, announces the securing of a contract for supplying the brick to be used in the erection of a large addition to the handsome brick library of the University of Pennsylvania.

The majority of brick manufacturers in Philadelphia report business as being very good. While very few large building contracts have been closed, the number of operation jobs has steadily increased. The season has been very late in getting under way, but prominent members of the trade are of the opinion that this season will far eclipse the same period of last year.

Exemption of all machinery and tools used in manufacturing in any mill or factory in the determination of taxable real estate in Philadelphia, is provided for in a bill recently introduced in the Senate at Harrisburg, by Senator Vare, and which is now on its second reading in the House. The bill further provides that the arrangement shall not apply to the valuation of capital stock of corporations for the purpose of state taxation.

Announcement has recently been made that the contract for the new factory building of the W. O. Hickok Manufacturing Company, to be erected on Cumberland street, east of the Pennsylvania railroad tracks, Harrisburg, Pa., has been awarded to the F. W. Havens Company, of Philadelphia. The contract for the bricklaying was let to Cranford and Stevenson, of Harrisburg. The work on the new building, which will cover about three acres, will be started immediately.

R. O. Cosler, of the Hay-Walker Brick Company, Pittsburgh, Pa., is a member of a party of one hundred and eleven business men who started May 18 on the fifteenth annual trade tour of the Pittsburgh Chamber of Commerce to carry the news of Pittsburgh's greatness as a manufacturing and jobbing center to thousands of residents in western and central Pennsylvania and Maryland. The party left Pittsburgh on a special train and will visit twenty-one towns. The tour promises to be one of the most important which the organization has ever had.

Appropriations for highway purposes aggregating $8,400,000 were recently reported to the House, at Harrisburg, by the Appropriations Committee, which used the Sproul Senate Bill to carry the amendments. This bill, as introduced, called for $8,400,000, and was increased to $9,500,000 by the House committee, but was returned to the committee. The items allowed are: State highways, $6,000,000; Cumberland road, $100,000; condemnation turn-

pikes, $300,000; state aid, $500,000; deficiency in state aid to townships, $1,500,000, with nothing for two years ahead.

TENNESSEE

The Southern Brick and Tile Company, of Jackson, Tenn., is furnishing the brick for several structures being built in that city.

The Johnson-Porter Clay Company, of Paris, Tenn., is busy in its clay pits at McKenzie, Tenn. Shipments are being made every week to Ohio potteries.

The Atoka Brick and Lumber Company, of Atko, Tipton county, Tenn., is handling all classes of building supplies and is having a good season in that locality.

The Chattanooga (Tenn.) Tile Company has just been awarded a $30,000 contract by the city of Greenville, S. C., for laying tile sidewalks and other work of similar character.

Architects Hart and Gardner, of Nashville, Tenn., have drawn plans for a brick apartment house to be known as the Louise, at Louise and Elliston Place, the cost of which will be $14,000. David F. Neilson and Thomas W. Gardner are the owners.

The Memphis, Tenn., Builders' Exchange has inaugurated a series of weekly conferences among the different crafts represented in the membership. The date on which brick contractors met was May 25, I. N. Chambers being chairman and William L. Richartz, vice-chairman.

UTAH

The Ashton Fire Brick and Tile Company, Salt Lake City, Utah, has sold a parcel of land about twenty rods square to the Utah Fire Clay Company, of that city, the consideration being $30,000. The deal was made a year ago but the actual transfer was delayed until an adjustment of the title to the property had been made. No buildings are planned on this land for at least a year according to the purchaser.

WASHINGTON

The tile and mantel works of C. W. Rogers, Seattle, Wash., were damaged by fire early in May.

The Richmond Beach Brick Company has been incorporated at Mt. Vernon, Wash., with a capital stock of $70,000 by E. Branchflower, Henry Gay, I. N. Gallagher and others.

The Denny-Renton Clay and Coal Company, Seattle, Wash., has recently secured some good contracts for work in Portland, Ore. One of these calls for 150,000 vitrified paving brick to be used in the paving of Russell Street from Williams to Gantenbien Street. Another is for architectural terra-cotta to the amount of $4,000 for the Tudor Arms Apartments at Eighteenth and Couch Streets, Portland. The demand for clay products has improved considerably in and about Seattle.

Pottery Notes

A resume of the Activities of the Potters and some Mention of their plans for the future.

Whether or not the National Brotherhood of Operative Potters at Atlantic City convention in July will decide

MORE EVIDENCE
in Favor of the Hook System



22 ft. kiln at plant of Angerer Clay Pro. Co., Schofield, Mich.

A letter received from the Angerer Clay Product Co., under date of November 23, 1914, reads as follows:

"We have two of your 22 ft. kilns. We have been burning mostly drain tile and burn a kiln in about 40 hours, with 6 tons of coal. The ware is uniform and well burned. So far this season we have turned a kiln a week. Are well pleased with your kilns and are glad to recommend them."

The Angerer Company further advise that because of insufficient dry shed capacity, they have often taken the tile direct from the mill and placed in kiln. They set three or four courses of comparatively dry tile on the bottom of the kiln, and then place the green ware above. They can burn this ware and secure a good, well-burned product, but, of course, must give it a longer time to dry.

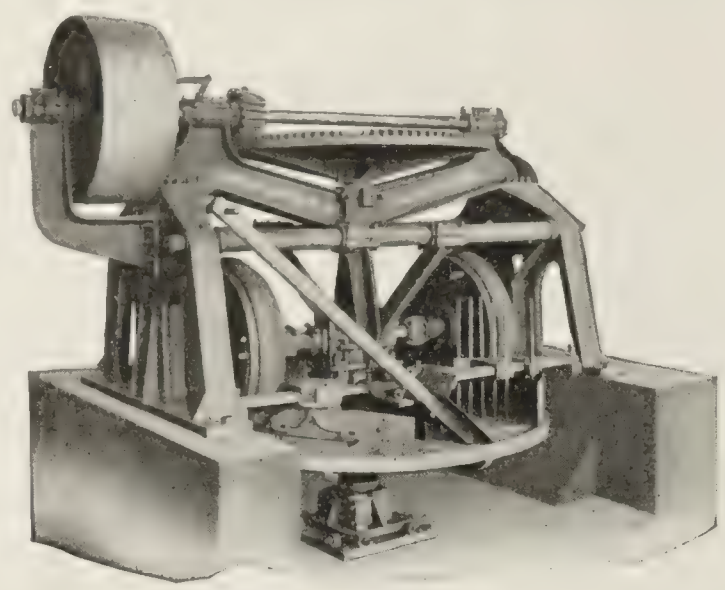
So far as the distribution of heat is concerned they could fill the kiln completely with green ware from the machine and burn it successfully, were it not for the fact that the green ware in the bottom would not support the weight of the other ware above.

In the ordinary down-draft kiln, even when filled with dry ware, the moisture from the ware above, while watersmoking, will often condense on the ware in the lower portion, causing it to soften and be crushed down by the weight which it is supporting. With our system this trouble is entirely eliminated, as, owing to the excellent distribution of heat, ware can be placed in the kiln as green as will support the weight above it, and be burned successfully.

Full information upon application

Hook Patent Kiln Co.
Main Office: Vigo, Ohio

Canadian Office: 250 Dufferin St., Toronto



Grinding Pan

Wet or Dry

Especially rugged and substantial. Nine-foot size weighs 40,000 lbs. Large shafts with bearings close to point of labor. Accessible adjustable step box. Extra heavy mullers and wear plates of hard white iron. All parts interchangeable. Repair parts always in stock and low in price.

Jackson & Church Co.

Saginaw, Mich.

Builders of a complete line of machinery for making Sand-Lime Brick. Boilers, Rotary Dryers and Kilns, etc.

to ask the manufacturers for an increase in wages for the next two years, is a matter that is causing more or less inquiry among the manufacturers. For some time the various locals affiliated with the brotherhood have been framing their resolutions to be sent to the convention, but the character of these resolutions have not nor will be made known to the public. The wage scale for the domestic potters, according to the last agreement signed with the manufacturers, expires October 1 next. Following the Atlantic City meeting of the brotherhood, a joint wage conference between committees representing the manufacturers and brotherhood will be held, when any differences that may exist will be "ironed out". The last agreement, known as the "Astor agreement," is now in effect.

The rank and file in the domestic pottery industry does not believe that any wage increase will be sought at this time, although a conference may be asked in order to discuss some changes in the working rules. It sometimes happens that such changes result in the cost of manufacturing being increased. No intimation is heard as to just where the wage conference will be held this year, although it is possible that Atlantic City will be selected for such a meeting.

Importation of foreign raw clays by pottery manufacturers for March, 1915, fell off nearly one hundred per cent over the record for the same period last year. However, there does not appear to be any scarcity of this material. In March of this year the imports of pottery clays amounted to only 14,852 tons as against a record of 29,168 tons for March, 1914. The importation of foreign ware has also fallen off, according to records just made public in the East Liverpool, Ohio, district, from a valuation of $8,000,000 for the nine months ending in March, 1914, to $6,000,000 for nine months ending March, 1915. Domestic conditions have been such, however, that the general consumption of both imported and domestic pottery has not been as heavy this spring as in former years.

Victor T. Noonen, safety director of the Industrial Commission of Ohio, has been going over the state showing workmen how to protect themselves from accident. He was in Steubenville recently and spent a half a day at the Steubenville pottery, where President Harry D. Wintringer arranged for the employes to hear him talk. Mr. Noonan is a "Safety First" expert, and was heard with the closest attention, for while there is comparatively little danger to the pottery operative, there are many simple rules of self-protection which the state of Ohio is trying to bring to workingmen and women in all industries. Mr. Noonan's work throughout the state is designed to reduce the number of accidents, for which, under the workmen's compensation act, the state is held responsible, to a certain extent.

The employes of the Knowles, Taylor and Knowles Pottery Company, E. Liverpool, Ohio, will hold their first annual field meet at Rock Springs Park, near E. Liverpool, on Saturday, June 19. Preliminary arrangements for the event have already been made and it is expected that all departments of the plant will be closed on that day to allow the workers to take advantage of the outing. A marathon race from the plant to the park will be one of the features of the program and the com-

pany's baseball team will play some other club on the picnic grounds.

A branch plant of an eastern pottery is a probability for Paducah, Ky., the purpose of which is to develop certain clay deposits which have recently been discovered in Marshall county. These deposits are said to cover a ninety-three-acre tract, located about four miles from Benton, the property of Luke T. Burradel, who is associated with R. D. Clements and Company, of Paducah. Prospectors, who have been testing the deposit, have penetrated in several places to a depth of thirty-one feet without finding the bottom of the clay.

At a recent meeting of Crooksville, Ohio, and out-of-town business men who are engaged in the promotion of a new porcelain plant for that town, it was definitely decided that the new plant would be located on the property of the Globe Stoneware Company. The Globe plant will be remodeled and the most modern equipment for the manufacture of high grade porcelain will be installed. It is understood that several of the Globe Pottery Company's stockholders will be interested in the new industry.

Employes of the Elite Pottery Company, of Trenton, N. J., recently complained, in a communication to the City Commissioner, of the nuisance caused them by the fumes coming from the plant of the Trenton Smelting and Refining Company. It is claimed by the protestants that the fumes are dangerous to their health. The matter has been referred to the legal department, although it is thought that the city can take no action in the matter.

Contractors have commenced the erection of three kilns at the plant of the Summit China Company, at Akron, Ohio. The plant was taken over some time ago by George H. Bowman and Company, of Cleveland, and the announcement made that it was to be turned into a china pottery. About a month will be required to complete the work now in progress, and it is reported that the company expects to have its new lines on the market by fall.

Manufacturing potters were glad to learn that George Knowles, of the clay importing firm of George Knowles and Son, of Trenton, N. J., canceled his reservation on the *Lusitania* the night before the boat sailed. Mr. Knowles is known favorably throughout the trade, and planned to go to England to look after some belated shipments of raw clay.

The Louisville (Ky.) Pottery Company is one of the plants in that state which is running on full time, paying special attention just now to crocks and jugs and the specialty lines. The company has installed a clay mixer and now is handling clay in carloads, grinding and mixing directly from the cars.

The United Manufacturers' Company, of Mansfield, Ohio, recently organized with a capital stock of $2,000, will manufacture pottery, enameled ware, and other varieties of clay products. Charles H. Keating, Charles S. Williams, Harry L. Princehorn, M. I. Scior and C. E. McBride are the incorporators of the company.

Thomas Barker, a well known potter, of Plainfield, N. J., recently received a telegram from Queenstown apprising him of the loss of his wife and daughter when the "Lusitania" was sunk. Barker is almost prostrate with grief, as he had previously been informed that his dear ones had been saved.

The Adamant Porcelain Company is a new concern in the crockery trade at East Liverpool, Ohio, having been incorporated by George R. Reid, E. L. Crowley and Ham-

More Belting Service Less Expense



PRIOR to thirty-six years ago leather belting set the standards of price for proper belt service.

At that time Gandy Stitched Cotton Duck Belting was first made.

Today, after thirty-six years of experience with Gandy Belt, thousands of users testify that Gandy does the work equally as well at about 1/3 the cost of leather belting, and at much less than rubber belting.

"Gandy" has set a new standard for belt expense. Do you know what Gandy can do in ***your*** plant? If not, 36 years of success warrants your investigating.

Samples and name of nearest distributor on request.

The Gandy Belting Company

732 Main Street, Baltimore, Md.

New York Office, 36 Warren Street

The Underwood Producer Gas Burning System

(Patented)

Is demonstrating daily its superiority over every other known method of burning clay products.

It does not except any kind of ware —burns all kinds from the finest to the coarsest with equal facility—does it perfectly.

It not only burns them better than can be done by any other known method but does it at a great saving—in time—in labor—in fuel consumption.

It elevates the plant from the class peculiar to this industry to the class of modern factories.

It gives the operators in charge of the burning a chance to work with their brain instead of brawn.

Doesn't this appeal to you as being just what you need and want?

You don't need to accept our statements for the above. Go to one of the many plants where it is operating daily and **see it for yourself.**

The Manufacturers Equipment Co.

Everything for the Clay Worker

Dayton - Ohio, U. S. A.

Western Agents: Geo. H. Smith
203 Sheidley Bldg., Kansas City, Mo.

lin Barnes, with a capital stock of $30,000. It will manufacture a full line of crockery goods.

With an increased activity in building operations, some improvement is reported among the sanitary pottery manufacturers. The western sanitary plants are working on better schedules, and the demand for this line of ware is expected to increase as the season advances.

An improved sagger machine has been invented at East Liverpool, Ohio, and is being installed in a number of potteries. The first machine of this character was invented by William Polk of East Liverpool, and is now being operated successfully.

Freight Tariffs and Troubles

(*Continued from page* 1054.)

which has been substantially summed up in the preceding paragraph.

COMMISSION DIVORCES RAILROADS FROM LAKE LINES

In an opinion of great interest to shippers of the northwest the commissioners have decided that boats on the Great Lakes shall no longer be controlled by the railroads. The decision is a result of the application of certain roads under the Panama Canal Act for an extension of time during which their interest in and operation of certain boat lines plying on the great lakes might be continued. In their syllabus in this case, which briefly contains the main points of the lengthy opinion, the Commissioners say:

1. That the physical fact of ports of call being served in common by the boats and the paralleling rails of the owning railroad establishes a case of competition existing between the owning railroad and its boat line.

2. That the case is the same where the entity which owns the boat line also owns, through stock control, another railroad entity, or is an integral part of a system of railroad whose paralleling rails serve ports of call in common with the boats.

3. That where an owning railroad is a party to through all-rail routes or a member of "fast freight lines" or an association of railroads owning boat lines whose function is to keep the operation of their boat lines from interfering with the rail operations, the interest it thus maintains in common with the rail carriers whose lines do compete with its boat line, is such an interest as the act provides against, and that it is possible for such an owning railroad to compete with its boat line for traffic, within the meaning of the act.

4. That the purpose of the Panama Canal act was to preserve to the common interest of the people, free and unfettered, the "water roadbed" via the Panama Canal. Also to restore all the water routes of the country to the same condition of freedom from domination that would reduce their usefulness as a natural means of transportation.

5. That Congress has decreed that there shall be a restoration of conditions which prevailed when railroads had no interest in and exercised no control over the boat

lines plying upon the water routes of the United States.

6. That upon the respective records herein concerned, none of the several existing specified services by water is being operated in the interest of the public or is of advantage to the convenience or commerce of the people within the meaning of the act, and that an extension of the respective interests of the petitioners therein will prevent, preclude, and reduce competition on the great lakes. The application of each of the petitioners is therefore denied, effective December 1, 1915.

PLANS FOR NEW BACK-HAUL RATES NOT APPROVED

The plans, as suggested by the carriers, for new rates to intermediate back-haul points in the Pacific Coast terminal case, have not been approved by the Commission according to an opinion just made public. They say in their syllabus:

1. Plans suggested for constructing rates to intermedite back-haul points not approved. Carriers authorized to construct such rates by adding to terminal rates not more than seventy-five per cent of the local rates from the nearest terminal to destination, or by adding arbitraries to the terminal rates, varying with distance from the ports, such arbitraries to be not more than seventy-five per cent of the local rates, the aggregate not to exceed the maximum prescribed for intermediate points in this order.

2. Carriers authorized to extend terminal rates to the following Pacific coast ports; San Diego, San Pedro, East San Pedro, Wilmington, East Wilmington, San Francisco, Oakland, Cal.; Astoria and Portland, Ore.; Vancouver, Bellingham, Everett, Tacoma, Seattle, Aberdeen, Hoquiam, and Cosmopolis, Wash.

3. Report and order of January 29, 1915, so modified as to permit maximum less-than-carload rates from the Mississippi River to intermediate points on first and second class commodities of $1.72 per one hundred pounds when lower rates are applicable to coast terminals.

COMPLAINTS AND REPARATIONS

In handing down their opinion in case No. 7201, the B. Mifflin Hood Brick Company, of Atlanta, Ga., against the Southern Railway Company, the Commissioners say:

"Rate charged for the transportation of a carload of common brick from Greenville, S. C., to Atlanta, Ga., found unreasonable. Reasonable rate prescribed for the future and reparation awarded."

No one appeared on behalf of the Chattanooga Sewer Pipe and Fire Brick Company, of Chattanooga, Tenn., at the argument to be heard before the Commission in their case, No. 7541, against the Southern Railway Company, et al. Edward H. Hart, appeared for the railroad company and made a short argument before the Commissioners. The railroad also filed a brief but no similar document was filed by the brick company.

Changes in Freight Rates

Since our last issue, the following freight tariffs, affecting clay products, have become effective:

From Eastern Points

From Allentown, Pa., all kinds of brick (except enameled) fireproofing made of clay and hollow building tile, to Scranton, Pa., $1.26 per net ton.

From Auburn, Pa., common, hollow, paving and vitrified brick, to Wilmington, Del., $1.05 per net ton.

From Barrington, Dover, Dover Point, East Kingston,

Marion
REVOLVING SHOVELS

WHEN a brick-maker puts a Marion to work taking out his clay, *his costs of operation go right down, and the quality of his brick goes up.*

The clay can almost always be taken out without blasting, and, through the efficient mixing of the various strata between the bottom of the cut and the top of the ground, can be made ready with comparatively little grinding.

Marions not Only "Pay Their Board" but Help You Produce More Uniform Brick at Less Cost

We'll welcome an opportunity to show you just how and why this is true—for it IS true beyond any question. We have put our whole experience into the building of Shovels that will do this work in a thorough, efficient way, proving themselves "good producers" from *your* standpoint.

A great many of the progressive brick manufacturers of the country are purchasing Marions—because *there is a line of Marion Shovels built expressly for clay-digging and other extra-heavy work.*

Details are fully explained in our interesting booklet "Digging and Mixing Clay—One Operation" which we shall be very glad to send you on request for Catalog 921.

The Marion Steam Shovel Company,
Established 1884
STATION A MARION, OHIO
Atlanta Chicago New York San Francisco Seattle
Manufacturers of Excavating Machinery of Every Description.

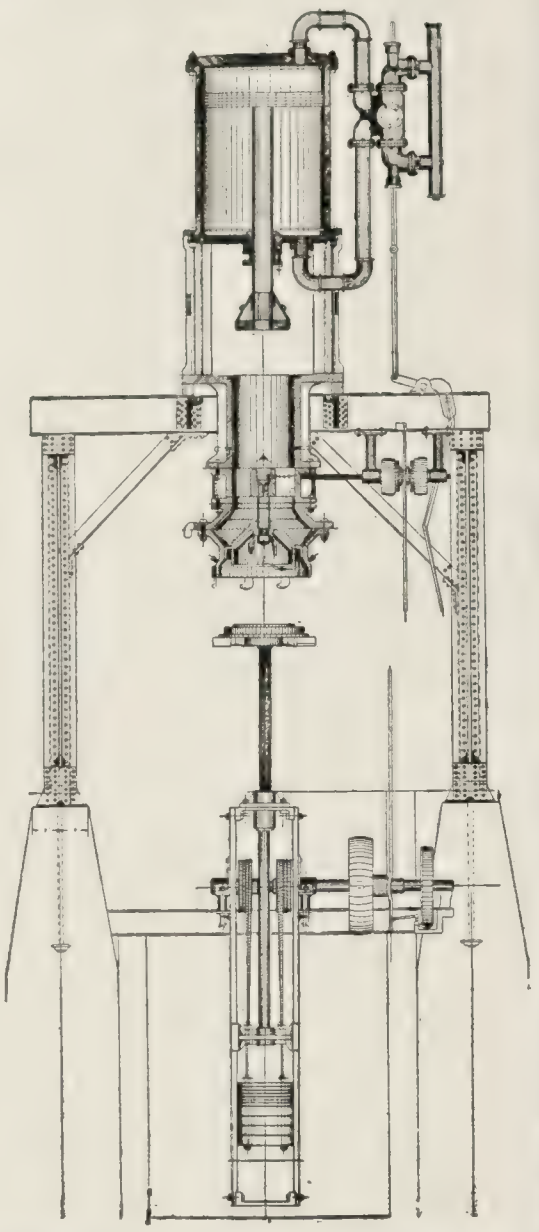


4

STEVENSON—
ALWAYS IN THE LEAD

NOTHING ELSE EVER PROCUCED EQUALS THIS

One- or Three-Rod Tile and Sewer Pipe Press



Guaranteed to make tile from 3 in. to 36 in. and more large pipe than any other machine on the market.

Before you buy any other press be sure to get our price on this—let us send you full details and tell you what it will do.

No one else, we are sure, can serve you quite as well as we can, because our manufacturing facilities are so excellent, and our selling cost so low.

Did we send you our catalog?

The Stevenson Company

Wellsville, Ohio

"IN THE HEART OF THE CLAY INDUSTRY"

Epping, Exeter, Lee, Madbury, Nashua, Portsmouth, Rochester, West Epping, Westville and West Gonic, N. H., Eliot and Saco, Me., Glenwood, Medford and Still River, Mass., and rate points, common brick, to Baltimore, Md., $3.26 per net ton; to Philadelphia, Pa., $2.84 per net ton; to Washington, D. C., $3.88 per net ton.

From Black Rock, N. Y., brick and other clay products, to Bridgeburg, Ont., 42c per net ton; to Thorold, Ont., 84c per net ton; to Welland and Welland Junction, Ont., 79c per net ton.

From Brownstone, Montello and Wyomissing, Pa., common and paving brick, to Annapolis, Md., $2.10 per net ton.

From Brownstone, Pa., common hollow, paving and vitrified brick, to Wilmington, Del., $1.21 per net ton.

From Buffalo, N. Y., brick and other clay products, to Welland, Ont., 84c per net ton.

From DuBois, Clay Switch, Stanley and Sykes, Pa., brick and clay products, to Brantford, Grimsby, Hamilton and London, Ont., Canada, $2.15 per net ton; to Montreal, Que., $3.42; to Niagara Falls, Ont., $1.80 per net ton; to Niagara-on-the-Lake, and St. Thomas, Ont., $2.15 per net ton; to Port Colborne and Welland, Ont., $1.90 per net ton; to St. Catharines, Ont., $1.95 per net ton; to Toronto, Ont., $2.36 per net ton.

From Eddystone, Pa., common, hollow, paving and vitrified brick, to Wilmington, Del., 65c per net ton.

From Elmira and Horseheads, N. Y., all kinds of brick (except enameled) fireproofing made of clay, and hollow building tile, to Albany, N. Y., $1.58 per net ton; to Scranton, Pa., $1.32 per net ton.

From Grove City, Pa., brick and fire clay, to Port Colborne, Ont., $1.95 per net ton.

From Mays Landing, N. J., common brick, to Delmar, Del., $2.04 per net ton.

From Mt. Holly Springs, Pa., common and paving brick, to Annapolis, Md., $2.26 per net ton.

From Oswego, N. Y., brick, to Barker, N. Y., $1.32 per net ton; to Syracuse, N. Y., 63c per net ton.

From Philadelphia, Pa., fire brick to Carney's Point and Penn's Grove, N. J., $1.21 per net ton.

From Port Reading and Woodbridge, N. J., fire brick to Coney Island, N. Y., $1.58 per net ton.

From Raritan River (N. J.) stations, brick and clay products, to Suffolk, Va., $4.42 per net ton.

From Saylorsburg, Pa., clay, to Waterford, N. Y., $2.10 per net ton.

From South Wilkes-Barre and Wilkes-Barre, Pa., all kinds of brick (except enameled) fireproofing made of clay, and hollow building tile, to Binghamton, N. Y., $1.59 per net ton.

From Spring Garden Junction, Pa., all kinds of brick (except enameled) fireproofing made of clay, and hollow building tile, to Albany, N. Y., $2.10 per net ton; to Plymouth and Scranton, Pa., $1.32 per net ton.

From Suspension Bridge, N. Y., brick and other clay products, to Bridgeburg, Welland and Welland Junction, Ont., 79c per net ton; to Merriton and Thorold, Ont., 84c per net ton.

From Trenton, N. J., fire brick, to Bath Beach, 39th St. and Third Avenue, Gravesend, Greenwood and Kensington, New York City, N. Y., $1.90 per net ton; to Coney Island, N. Y., $2.30 per net ton.

From Winslow Junction, N. J., brick, to Waterloo, Va., $1.94 per net ton.

From Middle West Points

From Blodgett and Weber, Ill., brick and articles taking the same rates, to Wilson Spur, Ill., 2c per cwt.

From Chicago and Waukegan, Ill., and Milwaukee, Wis., brick and articles taking the same rate, to Wilson Spur, Ill., 3c per cwt.

From Dundee and Gilberts, Ill., brick and articles taking the same rates to Wilson Spur, Ill., 5c per cwt.

From East St. Louis, Ill., and St. Louis, Mo., brick (except bath or enameled) to Shelbyville, Mo., 9c per cwt.; to Leonard, Mo., 9½c per cwt.; to Cherry Box, Mo., 10c per cwt.; and to Novelty, Mo., 10½c per cwt.

From Elyria, Ohio, brick, to Amherst and Oberlin, Ohio, 42c per net ton.

From Indianapolis, Ind., brick and articles taking the same rates, to Bristol, Tenn.—Va., 22.6c per cwt.

From Lombard, Ill., brick and articles taking the same rates, to Wilson Spur, Ill., 4.2c per cwt.

From Menominee Tramway, Wis., brick and articles taking the same rates, to Atchison and Leavenworth, Kan., Kansas City, North Kansas City and St. Joseph, Mo., and Nebraska City, Neb., 12½c per cwt.

From Milwaukee, Wis., and Chicago, Ill., and rate points, brick and articles taking the same rates, to Bristol, Tenn.—Va., 24.1c per cwt.

From Minneapolis, Minnesota Transfer and St. Paul, Minn., brick and articles taking the same rates, to Council Bluffs, Ia., Nebraska City, Omaha and South Omaha, Neb., 8c per cwt.

From Racine, Wis., brick and articles taking the same rates to Wilson Spur, Ill., 2½c per cwt.

From St. Paul, Minnesota Transfer, Minneapolis, Stillwater, South Stillwater, Oak Park, Coon Creek, Anoka, Dayton and Elk River, Minn., brick and articles taking the same rates, to Ashland and Washburn, Wis., 7c per cwt.

From West Salem, Ill., brick (except bath and enameled) and articles taking the same rates, to Minneapolis, Minnesota Transfer and St. Paul, Minn., $2.35 per net ton; to Greenville, Pocahontas, Collinsville, Caseyville, Caseyville and other Illinois points, $1.21 per net ton.

From Western Points

From Aberdeen, S. D., brick (except bath and enameled) and other clay products, to St. Louis, Mo., 21½c per cwt.

Camanche, Clinton and Lyons, Ia., brick and articles taking the same rates, to Wilson Spur, Ill., 5.3c per cwt.

From Chewelah and Springdale, Wash., common brick, to Republic, Wash., 8½c per cwt.

From Chewelah, Wash., common brick, to Spokane, Wash., 3c per cwt.; to Grand Forks and Granby Smelter, B. C., 6c per cwt.

From Clayton, Wash., common brick, to Grand Forks and Granby Smelter, B. C., 8c per cwt.

From Colville, Wash., common brick, to Spokane, Wash., 5c per cwt.

From New Florence, Mo., brick and articles taking the same rates, to Detroit, Delray, South Adrian, Adrain, and North Morenci, Mich., and rate points, $2.20 per net ton; to Terre Haute, Ind., $1.42 per net ton; to Indianapolis, Ind., $.62 per net ton; to Attica, Covington, Shelbys and West Lebanon, Ind., $1.36 per net ton; to Delphi, Riverside, and Lafayette, Ind., $1.58 per net ton; to Huntington, Andrews and Lagro, Ind., $1.78 per net ton.

"Premium" Coal
Produces Better Brick and Tile for Less Money

Because:

It lasts longer—

It contains more heat—

It leaves less ash—

It produces a long, steady flame—

It does not clinker.

We are supplying some of the largest brick and tile manufacturers in the Central West.

They are saving money in their fuel requirements by using our coal, and you can do the same.

Analysis of "Premium" Coal

Moisture	**6.00%**
Volatile Matter	**37.89%**
Fixed Carbon	**47.11%**
Ash	**9.00%**
	100.00%

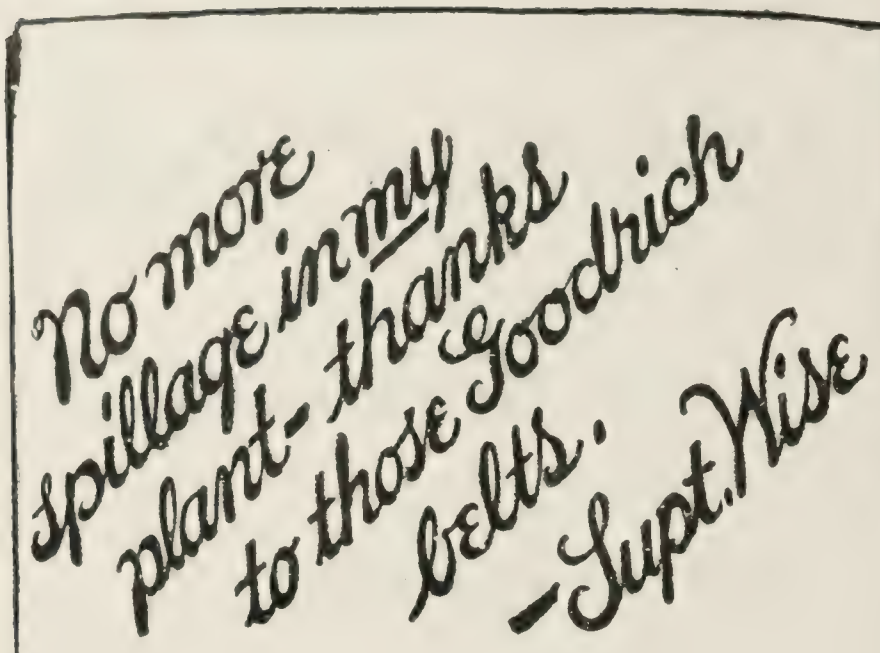
B. T. U. Dry, 13450

"BIG CREEK SERVICE"
means high quality products, as you want them and when you need them.

Big Creek Colliery Company

Peoples Gas Building
Chicago

Galesburg, Ill. **Minneapolis, Minn.**



Flexibility, combined with strength, is the secret of Goodrich conveyor belt success. Our belts trough so perfectly and run so smoothly that they won't ride off the pulleys and spill the load.

These same qualities make edge-wearing guide idlers unnecessary—another cut in tonnage costs for you, if you use

Goodrich
LONGLIFE and MAXECON
CONVEYOR BELTS

We want you to write us regarding your installations for the reason that all Goodrich belts are engineering masterpieces. They are made by men who know the conditions *you* have to combat in *your* plant—and our engineers have built a belt *especially* to meet *your own* operating conditions.

We will gladly refer you to plants which are finding our belts best. It will pay you to *"Get in touch with Goodrich"*

Goodrich Products:

Conveyor Belts	Transmission Belts	Packing
Elevator Belts	Hose—all kinds	Valves, etc.

The B. F. Goodrich Company

Factories: Akron, Ohio

"Get in touch with Goodrich"

From Southern Points

From Chattanooga, Tenn., common brick, to Athens, Lenoir City, Colie, Gillman, Loudon and Niota, Tenn., $1.25 per thousand; to Black Fox, Calhoun, Charleston, Citico, Cleveland, Hinch, McCarty, and McDonald, Tenn., $1.00 per thousand.

From Powell, Tenn., brick, to Knoxville, Tenn., 50c per thousand, applying on state traffic only; to Maryville, Tenn., $1.20 per thousand.

Engineering Chief Recommends Brick Paving

(*Continued from page* 1048.)

per linear foot. South street has five inches of concrete for a base, two inches of sand and a four-inch thickness of brick.

"The roadway pavement of brick recently put down in Wyuka cemetery was much lighter—only three inches of concrete was used, the aggregate being of washed and screened Platt river sand and gravel mixed, the sand bedding between the concrete and brick being about one inch. Brick were laid flat, giving 2½ inches of brick only. This cost $1.45 per square yard, with its asphalt filler. The curb is twenty-two inches wide and cost 30 cents per linear foot. Our people interested in Sheridan boulevard paving should look this over.

"While South street is heavier construction than I believe is warranted on Sheridan boulevard, the Wyuka is, I think, too light, and would suggest something between the two.

"Few appreciate the care which must be taken and the risk run while building a concrete roadway under most favorable circumstances and especially is care needed in a warm dry climate. Maintenance cost, where the extremes of hot and cold and wet and dry are as we have them in Nebraska, soon begins. Concrete expands and contracts with heat and cold, about as does iron or steel. It also contracts when dry and expands when wet and is therefore constantly moving and under great internal strains.

"With brick wearing surface, the concrete base can be put in with less care and with native materials for aggregate, the shrinkage cracks can be ignored, the brick with their asphalt filler keep water and heat from the concrete under and the only expansion to be cared for is taken up by the asphalt joints along each row of brick.

"In a concrete roadway the smallest particle of earth or quicksand which gets into the wearing surface makes a weak spot which shells out. The granite aggregate and sand must be mixed with first-class cement and water in the proper proportion. The best practice is to mix all and place it at one time. This is not always done. The cement should be brought to surface of the mass by tamping, sweeping or troweling to give good wearing surface. As soon as labor is finished the surface should be protected from the hot sun by canvas cover until cement is set hard enough to walk on. It should then be wet down and covered with earth and the whole surface kept wet for at least two weeks.

"Proper expansion joints should be left every thirty-five feet. These joints are a source of trouble and the expense of proper maintenance is considerable.

"While the brick pavement I have recommended above is, in first cost, a little more expensive than any such concrete road as we ought to consider using, I am sure the brick will have proven itself the cheaper after a very short period in the way of saving in maintenance, and I therefore recommend it."

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Babbitt Metal.
Cleveland Alloys Co.
Fate, J. D. Co.
Gerlock, H. W.

Barrows and Trucks.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Steele & Sons, J. C.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
American Clay Machy. Co.
Bonnot Co.
Ceramic Sup. & Cons. Co.
Freese & Co., E. M.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.

Belt Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Belt Dressing.
Cling-Surface Co.
"Gripwell" Pulley Covering Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Clay Machy. Co.
Bonnot Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate Co., The J. D.
Link-Belt Co.
Manufacturers Equipment Co.

Brick Machinery.
(Also see Dry Press Brick Machines, Sand-Lime Brick Machines, Soft Mud and Stiff Mud Brick Machines.)
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Brick Moulds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equip. Co.

Burning and Drying Systems.
American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Manufacturers Equip. Co.
Schaffer Eng. & Equip. Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Cables and Cableways.
Broderick & Bascom Rope Co.

Car Movers.
Marion Machine, Fdry. & Sup. Co.
Sackett Screen & Chute Co.

Cars.
(See Clay Cars, Dump Cars, Dryer Cars, Electric Cars, and Transfer Cars.)

Cars, Trucks and Turntables.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Canton Grate Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Castings.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

Cement Filler.
Lehigh Portland Cement Co.

Chains (Steam Shovel).
Woodhouse Chain Works.

Clay Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Clay Feeders and Mixers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Equipment Co.
Steele & Sons, J. C.
Stevenson Co.
Toronto Fdry. & Machine Co., Inc.

Clay Plants Complete.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Clay Handling Machinery.
American Clay Machy. Co.
Clearfield Machine Shops.
Fate Co., The J. D.
Link-Belt Co.
Weller Mfg. Co.

Clay Steamers.
American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Equipment Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Link-Belt Co.
Weller Mfg. Co.

Coal.
Big Creek Colliery Co.

Coal and Ash Conveyors.
Link-Belt Co.

Coloring.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Contracting Engineers and Machinists.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.
Smith Co., Claude.

Conveying Machinery.
(See Elevators and Conveyors.)

Cordage.
Broderick & Bascom Rope Co.

Crushers.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Phillips & McLaren.
Wallace Mfg. Co.

Cutters, Automatic Rotary.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate, Co., J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.
Steele & Sons, J. C.
Wallace Mfg. Co.

Cutting Wires.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Mittler Wire Mfg. Co.
Webb Wire Works.

Dies.
American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Nuttall Co., R. D.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Disintegrators.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equip. Co.
Marion M. Fdry. & Sup. Co.

Draft Gages.
Ceramic Supply & Cons. Co.

Dryer Cars.
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co., Inc.
Trautwein Dryer & Eng. Co.

Dryers.
American Clay Machy. Co.
American Process Co.
Bartlett Snow & Co., C. O.
Bonnot Co.
Chambers Bros. Co.
Fate, J. D. Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Smith Co., Claude.
Standard Dry Kiln Co.
Steele & Sons, J. C.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Company.
Fate, Co., The J. D.
Jackson & Church Co.
Schaffer Eng. & Equip. Co.

THE BUYERS' DIRECTORY—Continued

Dry Pans.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Phillips & McLaren.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.

Dry Press Brick Machines.
American Clay Machy. Co.
Bonnot Co.
Chicago Brick Machy. Co.

Dump Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Lakewood Eng. Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.

Efficiency Experts.
Estes, Inc., L. V.

Electrical Furnaces.
Englehard, Chas.

Electric Cars.
American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Freese & Co., E. M.

Electric Shovels.
American Clay Machy. Co.
Ball Engine Co. (Erie Shovel).
Link-Belt Co.
Thew Automatic Shovel Co.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Price Electric Co.

Elevator Buckets.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Elevators and Conveyors.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Clearfield Machine Shops.
Fate, J. D. Co.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.
Weller Mfg. Co.

Engineers.
American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Clearfield Machine Shops.
Copping Bros.
Deavitt, H. M.
Freese & Co., E. M.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Equip. Co.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Engines and Boilers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Freese & Co., E. M.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
American Clay Machy. Co.
Broderick & Bascom Rope Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Copping Bros.
Freese & Co., E. M.
Smith Co., Claude.
Trautwein Dryer & Eng. Co.

Explosives.
Du Pont Powder Co.

Fans.
American Clay Machy. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Murray Iron Works Co.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Canton Grate Co.
Freese & Co., E. M.
Jackson & Church Co.
Murray Iron Wks. Co.

Filler (Paving.)
Barrett Mfg. Co.
Lehigh Portland Cement Co.

Filter Presses.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Stevenson Co., The.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Cincinnati Frog & Switch Co.
Toronto Fdry. & Machine Co., Inc.

Furnaces.
Brown Instrument Co.
Smith Co., Claude.
Stupakoff Laboratories.
Trautwein Dryer & Eng. Co.

Gears.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Fate, J. D. Co.
Link-Belt Co.
Nuttall Co., R. D.
Toronto Fdry. & Machine Co., Inc.

Granulators.
American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Wallace Mfg. Co.

Grates and Grate Bars.
Brewer & Co., H.
Canton Grate Co.
Chicago Brick Machy. Co.
Fate, J. D. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Marion Mach., Fdry. & Supply Co.
Martin Grate Co.
Murray Iron Wks. Co.
Smith Co., Claude.
Toronto Fdry. & Machine Co., Inc.

Hand Power Presses.
Clearfield Machine Shops.
Fate, J. D. Co.

Hoists.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Sackett Screen & Chute Co.
Weller Mfg. Co.

Hollow Block Machinery.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Industrial Organization.
Estes, Inc., L. V.

Insulated Wire.
Goodrich Co., B. F.

Insurance.
Read & Day.

Kilns.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Hook Patent Kiln Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Equip. Co.
Smith Co., Claude.
Tecktonius Mfg. Co., E. C.

Kiln Doors and Frames.
Fate, J. D. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Smith Co., Claude.

Kiln Lugs and Bands.
Caldwell Co., W. E.
Fate, J. D. Co.
Gerlock, H. W.
Lakewood Engineering Co.
Smith Co., Claude.
Tecktonius Mfg. Co., E. C.

Lime Mixers.
Gerlock, H. W.

Lists.
Mail Order Co.

Locomotive Cranes.
Link-Belt Co.

Locomotives (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gasoline).
Baldwin Locomotive Works.
Fate, J. D .Co.

Locomotives (Steam).
Davenport Locomo. Works.
Dewey Bros., Inc.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Bonnot Co.
Trautwein Dryer & Eng. Co.

Mineral Paint.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Mortar Colors.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Molds.
American Clay Machy. Co.
Baird Machine & Mfg. Co.
Bonnot Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Mold Sanders.
American Clay Machy. Co.
Bonnot Co.
Manufacturers Equipment Co.
Martin Brick Mch. Mfg. Co.

Motors—Electric.
General Electric Co.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Filters.
Canton Grate Co.

Paints.
Clinton Metallic Paint Co.
Ricketson Mineral Paint Wks.
Williams & Co., C. K.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

Pallets and Trays.
Lakewood Engineering Co.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Herbert E.

Perforated Sheet Metal.
Brewer & Co., H.
Hendrick Mfg. Co.

Poldometers.
Schaffer Eng. & Equip. Co.

Portable Track.
Atlas Car & Mfg. Co.
Cincinnati Frog & Switch Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.

Potters' Machinery.
Bonnot Co.
Baird Machine & Mfg. Co.
Fate, Co., The J. D.
Toronto Fdry. & Machine Co., Inc.

Powder.
Du Pont Powder Co.

Power Plant Equipment (Complete).
American Clay Machy. Co.
Bonnot Co.
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Baird Machine & Mfg. Co.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
(See: Dry Presses, Represses and Sewer Pipe Machinery.)
Baird Machine & Mfg. Co.

Pug Mills.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co .
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.
Martin Brick Mach. Mfg. Co.
Steele & Sons. J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Pulley Covering.
"Gripwell" Pulley Covering Co.

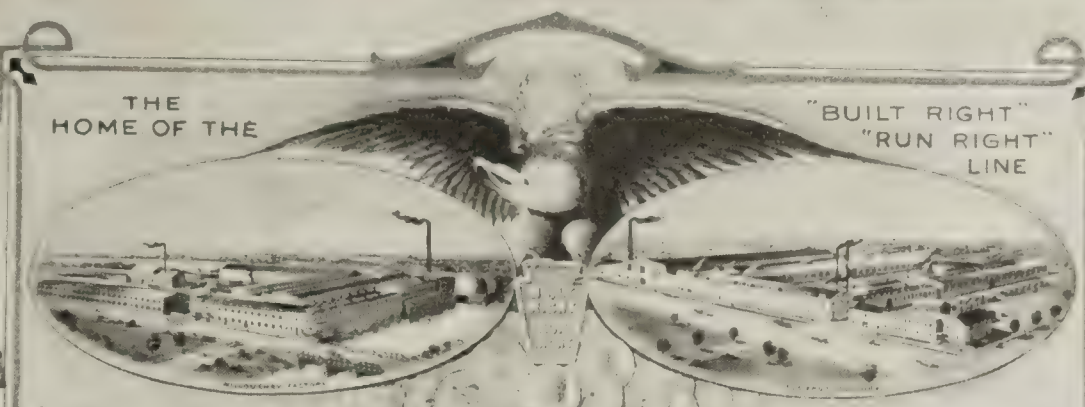
Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulverizers.
American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Chicago Brick Machinery Co.
Fate, J. D. Co.
Freese & Co., E. M .
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Price Electric Co.
Stupakoff Laboratories.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

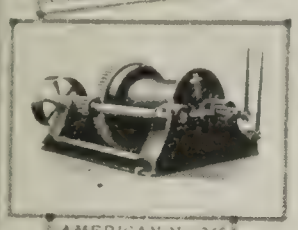
Quartz Glass Articles.
Engelhard, Chas.

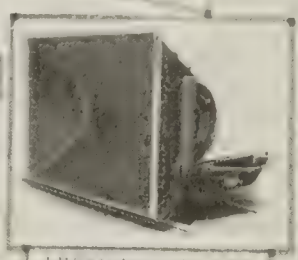
Rails (Frogs and Switches).
American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Chase Fdry. & Mfg. Co.
Cincinnati Frog & Switch Co.
Frank, M. K.
Foster Co., L. B.



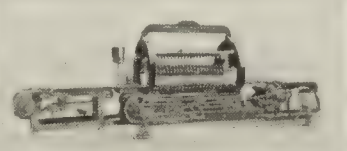

AMERICAN No. 292 REPRESS



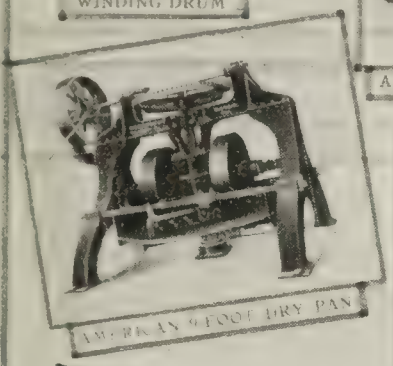

AMERICAN No. 245
WINDING DRUM




AMERICAN No. 291 PUG MILL


AMERICAN No. 20
ROTARY AUTOMATIC CUTTER


AMERICAN DISINTEGRATOR


AMERICAN 9-FOOT DRY PAN

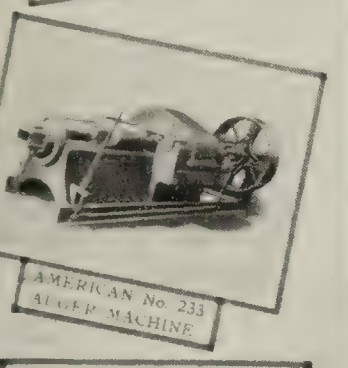

AMERICAN CONTINUOUS KILN

THE LATEST BRICK CUTTER

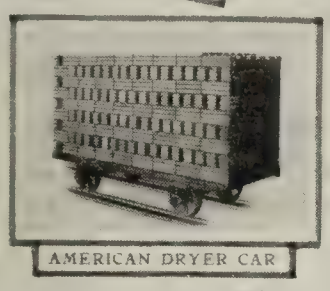
Our new American No. 342 Cutting Table is the latest and most approved type of automatic cutter on the market. Its basis of construction is the well-known substantial "Built Right Run Right" type. It has a range in capacity from 50,000 to 75,000 brick per day. It is adapted for either face brick or paving block. It has a new and improved type of wire fastener which prevents loose wires and makes it possible to use wires of unequal length. It is strong—substantial—durable, and it is making good. This cutter is worthy of your careful investigation.

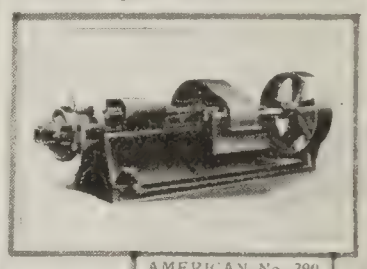
We build every machine and appliance needed in the clay trade. Equal care and attention to small and large orders.

The American Clay Machinery Co.
Bucyrus, Ohio

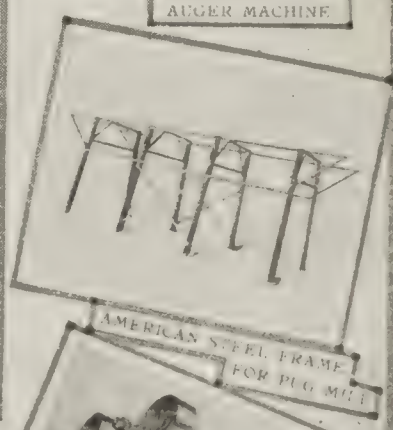

AMERICAN No. 233
AUGER MACHINE


AMERICAN WASTE
HEAT DRYER


AMERICAN DRYER CAR

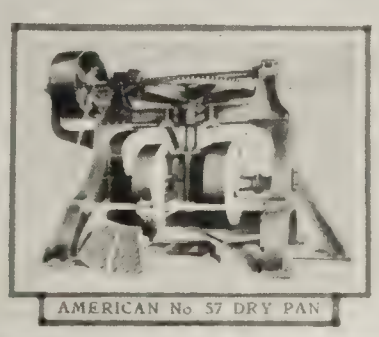

AMERICAN No. 290
AUGER MACHINE

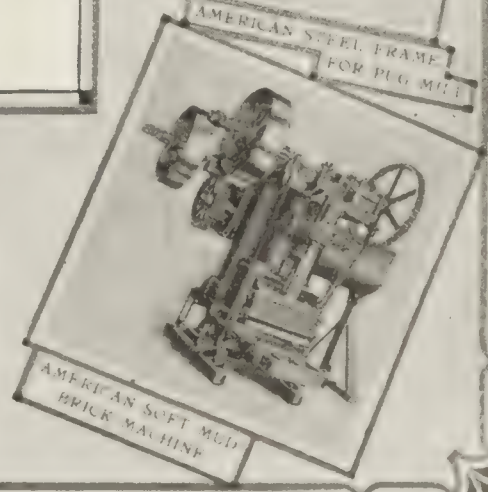

AMERICAN STEAM SHOVEL


AMERICAN STEEL FRAME
FOR PUG MILL


AMERICAN MODEL C DRY PRESS


AMERICAN WASTE HEAT FAN


AMERICAN No 57 DRY PAN


AMERICAN SOFT MUD
BRICK MACHINE

THE BUYERS' DIRECTORY—Continued

Lakewood Engineering Co.
Richardson & Co.
Sackett Screen & Chute Co.
Toronto Fdry. & Machine Co., Inc.

Railway Equipment (Industrial.)

American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Richardson & Co.

Rattler.

American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Freese & Co., E. M.
Hetherington & Berner
Manufacturers Equipment Co.

Recording Gages.

Brown Instrument Co.
Ceramic Sup. & Cons. Co.

Represses.

American Clay Machy. Co.
Bonnot Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Steele & Sons, J. C.

Revolution Indicators.

Brown Instrument Co.
Ceramic Supply & Cons. Co.

Rope Preservative.

Cling-Surface Co.

Roofing Tile Machinery.

American Clay Machy. Co.
Bonnot Co.
Fate, J. D. Co.
Freese & Co., E. M.
Manufacturers Equipment Co.

Rope (Wire and Manila).

Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.

American Clay Machy. Co.
American Process Co.
Bonnot Co.
Fate Co., The J. D.
Jackson & Church Co.
Schaffer Eng. & Equip. Co.

Sand Lime Brick Machinery.

American Clay Machy. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chicago Brick Machy Co.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.

Arbuckle & Co.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).

American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chase Fdry. & Mfg. Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Fate, J. D. Co.
Freese & Co., E. M.
Hendrick Mfg. Co.
Lakewood Engineering Co.
Link-Belt Co.
Sackett Screen & Chute Co.
Schofield-Burkett Cons. Co.
Stevenson Co., The.
Weller Mfg. Co.

Sewer Pipe Machinery.

American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Manufacturers Equipment Co.
Stevenson Co.
Toronto Fdry. & Machine Co., Inc.

Shale Planer.

Arbuckle & Co.

Shovels (Hand).

Sackett Screen & Chute Co.

Silent Chain Drives.

Link-Belt Co.

Silo Block.

Mowrystown Brick & Tile Co.

Silo Front.

Zook, G. W.

Soft Mud Brick Machines.

American Clay Machy. Co.
Bartlett & Snow Co., C. O.
Bonnot Co.
Manufacturers Equipment Co.
Wallace Mfg. Co.

Sprocket Wheels.

Link-Belt Co.

Steamers (Clay).

American Clay Machy. Co.
Arbuckle & Co.
Schaffer Eng. & Eq. Co.

Steam Gages.

Brown Instrument Co.

Steam Separators.

Canton Grate Co.

Steam Shovels.

American Clay Machy. Co.
Ball Engine Co. (Erie Steam Shovel)
Marion Steam Shovel Co.
Thew Auto Shovel Co.

Stiff Mud Brick Machines.

American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Steele & Sons, J. C.
Stevenson Co., The.
Wallace Mfg. Co.

Steel Pallets.

Lakewood Eng. Co.
Ohio Galvanizing & Mfg. Co.

Steel Ties.

Cincinnati Frog & Switch Co.

Steel Towers.

Caldwell Co., W. E.

Supplies.

American Clay Machy. Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Ceramic Supply & Cons. Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Freese & Co., E. M.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Steele & Sons. J. C.
Stevenson Co., The.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.
Weller Mfg. Co.

Switches and Frogs.

Cincinnati Frog & Switch Co.
Toronto Fdry. & Machine Co.

Tanks.

Caldwell Co., W. E.

Thermometers.

Brown Instrument Co.
Ceramic Supply & Cons. Co.
Engelhard, Chas.
Manufacturers Equipment Co
Price Electric Co.
Standard Dry Kiln Co.

Tie Plates.

Cincinnati Frog & Switch Co.

Tile Machinery.

American Clay Machy. Co.
Arbuckle & Co.
Bonnot Co.
Brewer & Co., H.
Chicago Brick Machy. Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Steele & Sons, J. C.
Toronto Fdry. & Machine Co., Inc.
Wallace Mfg. Co.

Time Clocks.

Hardinge Bros., Inc.

Tramways.

Ambursen Co.

Transfer Cars.

American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Chase Fdry. & Mfg. Co.
Freese & Co., E. M.
Gerlock, H. W.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co., Inc.

Turntables.

American Clay Machy. Co.
Atlas Car & Mfg. Co.
Bonnot Co.
Cincinnati Frog & Switch Co.
Freese & Co., E. M.
Jackson & Church Co.
Lakewood Engineering Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Sackett Screen & Chute Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co., Inc.

Unloading Devices for Pans.

American Clay Machy. Co.
Bonnot Co.
Clearfield Machine Shops.
Toronto Fdry. & Machine Co., Inc.

Watchman's Clocks.

Hardinge Bros., Inc.

Water Tanks.

Caldwell Co., W. E.

Wet Pans.

American Clay Machy. Co.
Bonnot Co.
Brewer & Co., H.
Clearfield Machine Shops.
Fate Co., The J. D.
Jackson & Church Co.
Toronto Fdry. & Machine Co., Inc.

Wheelbarrows.

(See Barrows and Trucks.)

Wheels and Axles (Car).

Bonnot Co.
Lehigh Car, Wheel & Axle Works.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co., Inc.

Winding Drums.

American Clay Machy. Co.
Bonnot Co.
Fate Co., The J. D.
Freese & Co., E. M.
Manufacturers Equipment Co.
Marion Machine, F. & S. Co.
Weller Mfg. Co.

Wire Rope.

Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Drying Troubles Disappear

wherever The Standard Natural Draft Drier is installed. Here is a drying system so far perfected that it **really is** adaptable for **all varieties** of clays. In

The Standard Brick Drier

the drying elements are so easily and so exactly controlled that anyone can operate it with the most satisfactory results.



Ask brickmakers whose clay is the same as yours. We'll send you names of many users with our catalog on request. Address The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.

8,000 SOFT MUD BRICK PER HOUR

is the guaranteed capacity of our brick machine with automatic mold dumper combined.

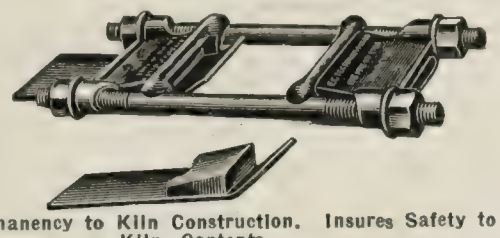
¶ If you wish to increase your output and decrease the cost of production, you should investigate our complete equipment for making 60,000 brick in eight hours with

BUT FIVE MEN IN THE MACHINE ROOM

The C. O. Bartlett & Snow Company, Cleveland, O., U. S. A.

ECTMCo

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction. Insures Safety to Kiln Contents.

WROUGHT IRON BANDS

Wall and Crown Guides
Crown Covers and Ventilators

Write for
Discount and Net Prices

E. C. Tecktonius Mfg. Co.
Racine Junction, Wis., U. S. A.

Up-and-Down Draft
Tecktonius-Vogt
Round Kiln



General Traffic Association, Inc., Woodward Building WASHINGTON, D. C.

Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts.

Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

Build with Brick

Sheet Steel Signs

$5.00 per hundred

Write for prices of signs with your name imprinted

BRICK & CLAY RECORD
445 Plymouth Ct., Chicago

Build with Brick

THE STANDARD RATTLER FOR THE TESTING OF PAVING BRICK

As we now build this machine it embodies all of the

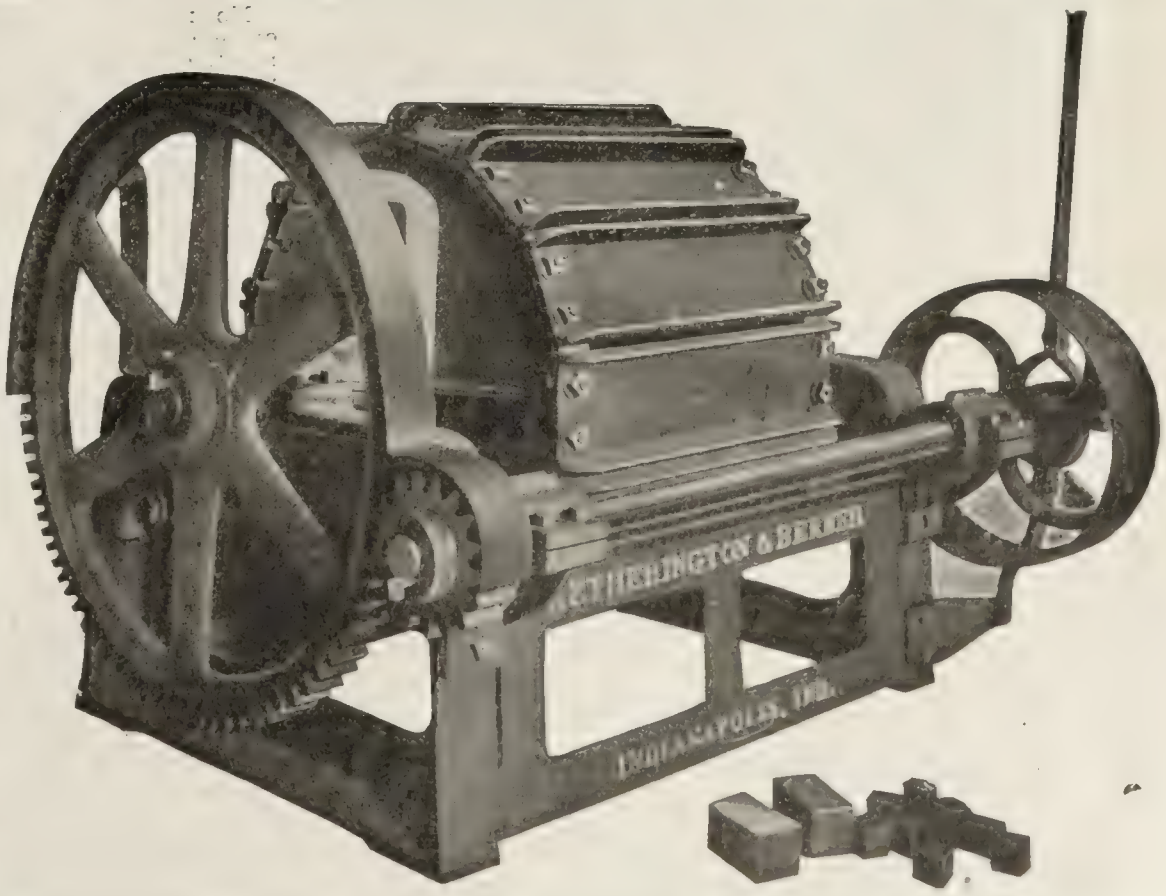
LATEST IMPROVEMENTS

and refinements of construction that have been found desirable during a period of tryout covering almost one year of time and conducted under the direction of the technical committee of the NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

For descriptive circular and prices address

HETHERINGTON & BERNER

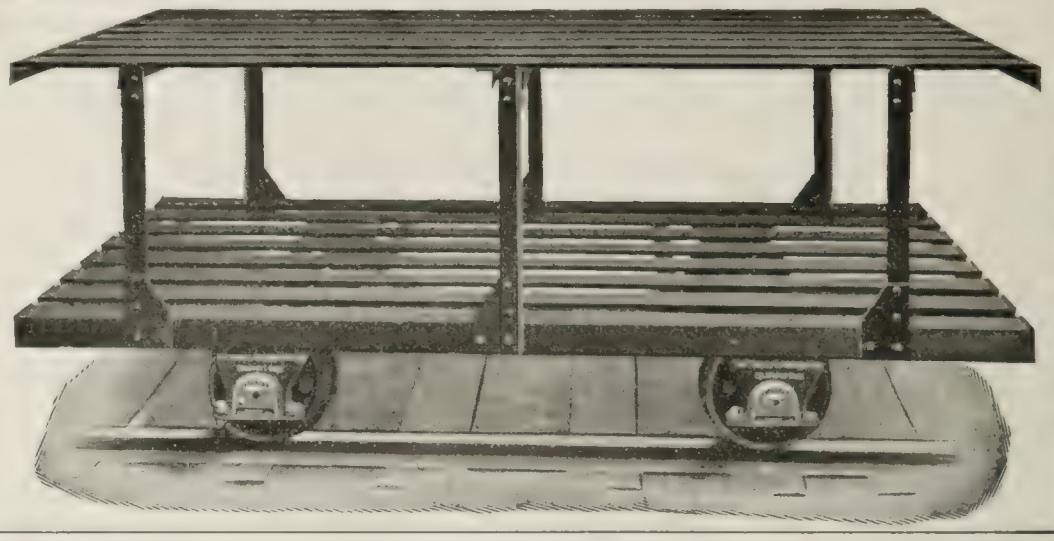
INDIANAPOLIS, INDIANA



THE CHASE DRYER CARS

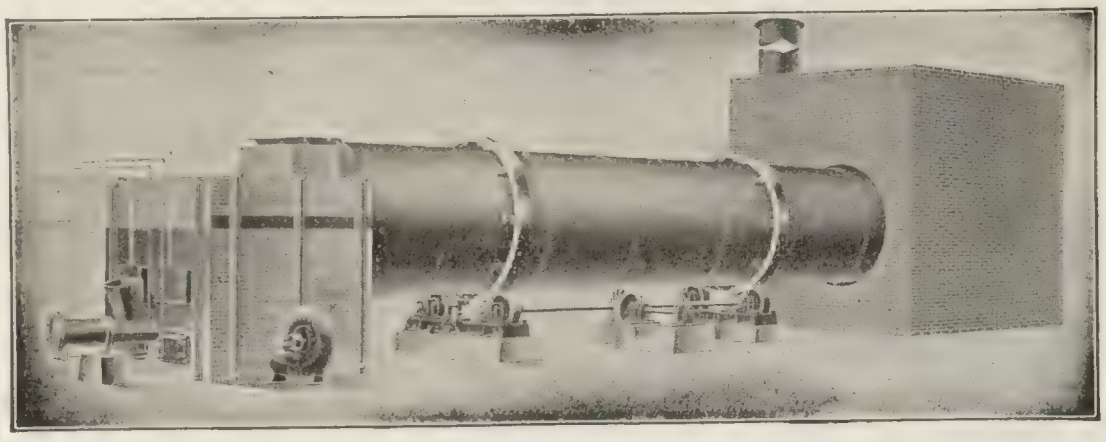
With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*



The Chase Fdry. & Mfg. Company

Columbus, Ohio



ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

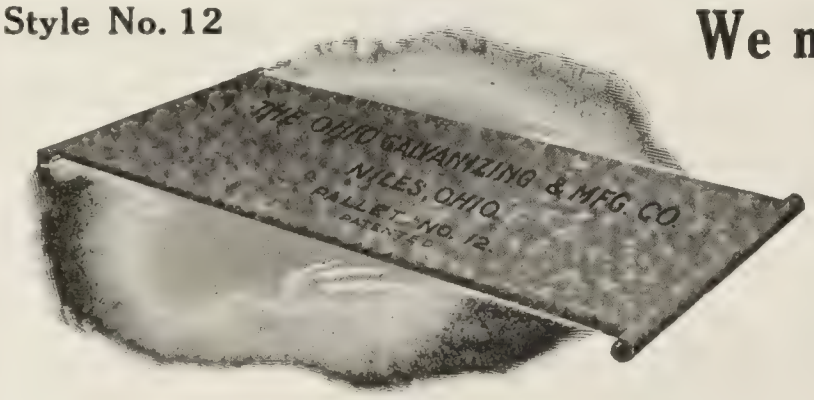
YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street

NEW YORK

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

PAVING BRICK MANUFACTURERS

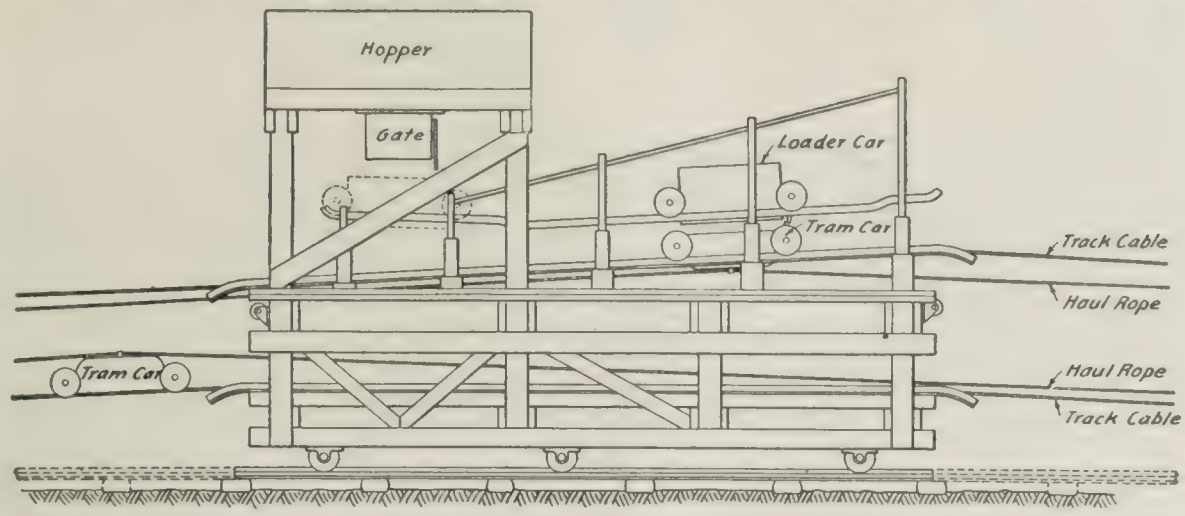
You will find the following circulars (reprints of articles appearing in "Brick and Clay Record") very helpful in fighting competitive materials.

The Truth about the Wayne County Roads (From October 7, 1913, issue)	100	-	$ 2.50
	500	-	12.00
	1000		20.00
Creosoted Block a Failure (From November 4, 1913, issue)	100	-	$ 2.00
	500	-	5.00
	1000	-	8.50
Governor Glynn Urges Use of Brick Roads (From April 7, 1914, issue)	100	-	$ 4.00
	500		15.00
	1000		20.00

BRICK AND CLAY RECORD, 445 Plymouth Court, Chicago

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

MOVABLE OR MULTIPLE LOADING POINTS



Movable Loader.

IT often happens that our tramway has to serve two or more mine tunnels, etc. This involves no special construction other than to set up a separate automatic loader at each loading point. Assuming that the amount of material handled is the same at each point, then if there are two loading points, each alternate car is so triggered as to engage its corresponding loader—if there are three loading points, every third car is triggered to engage its own loader, etc. The whole loading scheme is therefore as automatic as if there were but one loader at the terminal.

In many other cases such as excavation in clay banks, gravel pits, sand banks, etc., there is only one loading point required, **but this must be movable** and so arranged as to travel directly with the steam shovel or other excavating machinery. We solve this problem in a very simply and practical manner.

The loader instead of being a part of the terminal frame, is mounted on a separate frame of its own which rolls on flanged car wheels. It is shifted from point to point by laying down temporary ties and two lengths of rail ahead of it precisely as with a steam shovel.

Over the loader is a small hopper bin usually of from 2 to 5 yds. capacity. This bin has in it one or more undercut gates which are hand operated and which discharge their load cleanly into the loader car beneath, which is then picked up automatically by the first car that comes along, the same as in standard work.

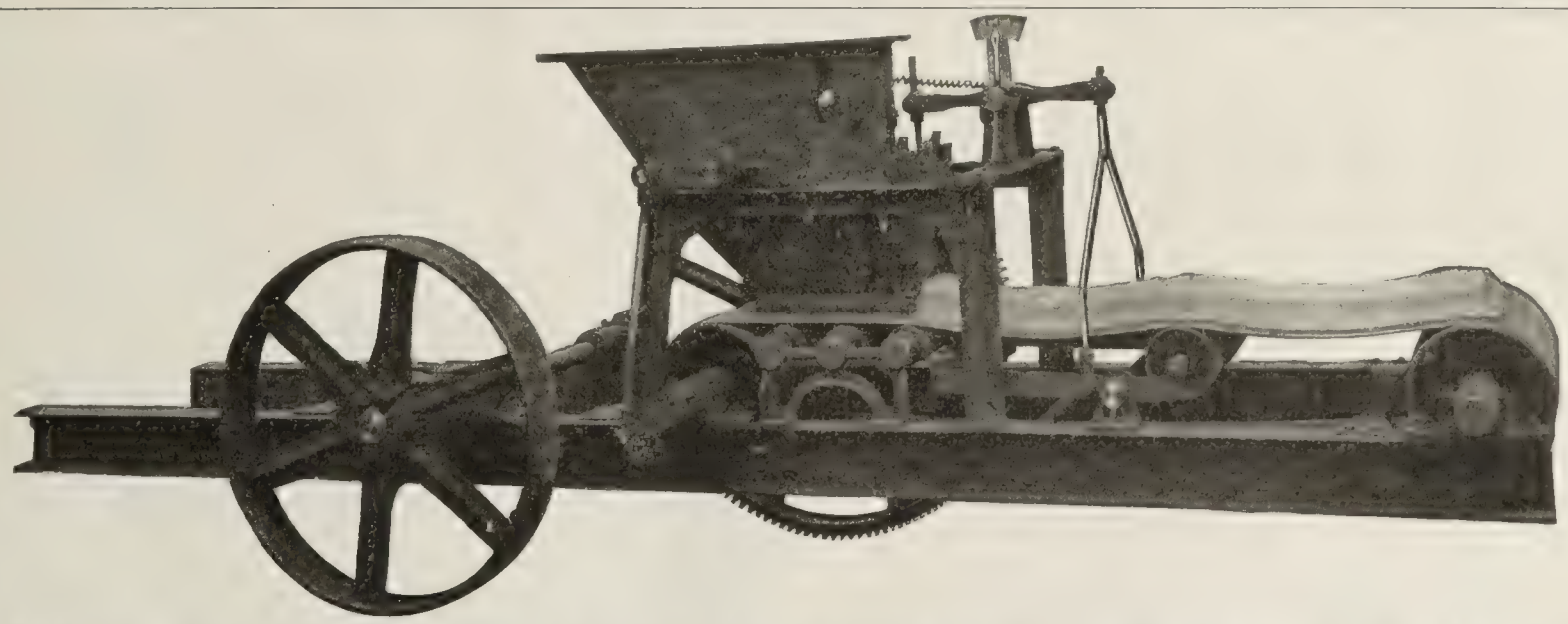
If scrapers or wheelbarrows are used for collecting the material a movable inclined runway of plank is carried across the tramway. The wheelbarrows or scrapers drop their load directly into or alongside the throat of the hopper which is in this case only equal in capacity to the loader car.

By this arrangement the steam shovel and the loader travel together back and forth across the pit, being shifted sideways from time to time as required.

In our next advertisement we will show how we treat the problem of multiple or movable dumping points.

Respectfully submitted,

AMBURSEN COMPANY, Tramway Dept., 61 Broadway, New York



The Schaffer Poidometer—*What it will do*

It Will

—unite any number of materials in correct proportion.
—deliver them to pug mill at a predetermin ed number of pounds per minute.
—deliver water at a predetermined number of pints per minute.
—produce a clay column evenly tempered, of absolute uniformity.
—do this—and it eliminates the pug mill man.
—reduce cracking, because the dry house man knows the material.
—reduce burning loss, because the burner can always produce the same color and hardness.
—pay for itself in one season by reduction in labor alone.
—produce a higher quality and greater quantity of first-class ware.

YOU CANNOT AFFORD TO BE WITHOUT IT—INVESTIGATE

The Schaffer Engineering & Equipment Company

Tiffin, Ohio

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

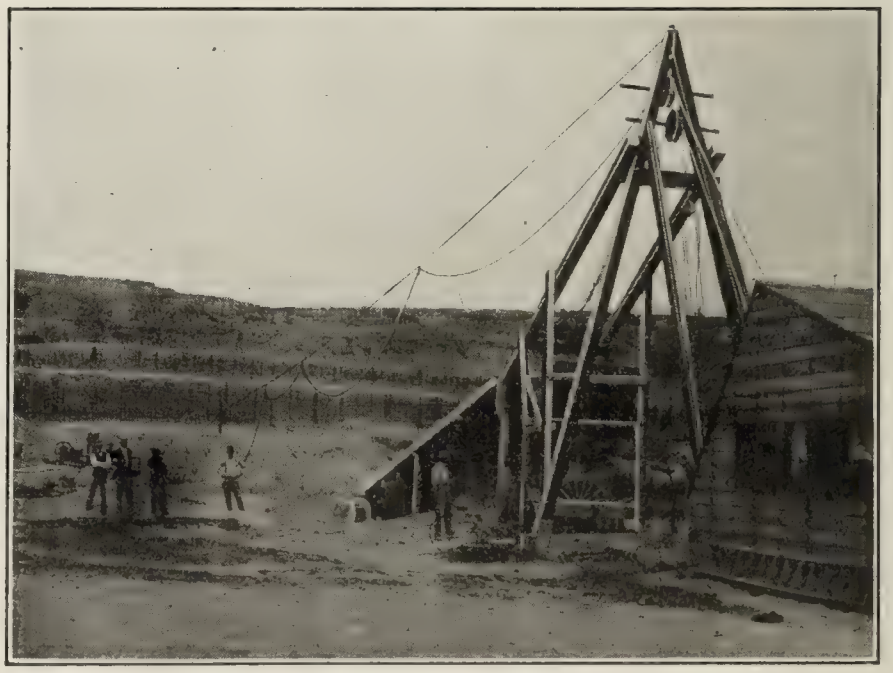
THE SAWYER BELTING COMPANY, Cleveland, O.

Read This Record

The machine shown in this scene **loads** about **300 yards of tough clay** in a **10 hour day.** A 75 H. P. motor supplies the power. Needs no industrial cars and track. Will **dig** and **deliver** any kind of sand, gravel, clay or shale to conveyors or hopper 100 to 600 cubic yards per day. This proves that the

Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. We are ready to give a **positive guarantee as to results.** Essential features of this machine are covered by patents. They were perfected after 15 years of experimental work. Nearly 200 sold first three years on market.



This is an actual scene of a Schofield-Burkett Excavator in operation in the clay pit of the Jova Brick Works, Roseton, N. Y.

Get Our Catalog No. 10. It tells you how and why the Schofield-Burkett Excavator best solves the digging and delivery problem. Get it now. A post card will bring it to you, **free.**

Schofield-Burkett Construction Co.
Office and Works: Macon, Georgia

Instrument perfection has been reached in our Multiple Recorders. They give a permanent Time-Temperature Record on a maximum of Six.

HERAEUS Le Chatelier PYROMETER

"The ultimate pyrometer"

Each record is absolutely and clearly defined from the others. The Instruments have a separate indicating scale for observation. The charts are continuous and have rectangular coordinates. There is no ink or other recording medium to stick or smear or to be replenished. Pen friction is entirely eliminated.

Their extremely high resistance (about 500 ohms) makes possible the use of both Indicating and Recording Instruments on the same Thermocouples, allowing the use of a central Indicating System for the burners and a Recording System for the Superintendent in his office.

With such a system better results can be obtained and the expense of an entire Recording Installation is made unnecessary.



We Supply Pyrometer Installations

"MADE FOR YOU" not "MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD 30 Church Street NEW YORK

CHICAGO BRICK MACH'Y CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press	Piano Wire Screens	Wet and Dry Clay Disintegrators
Auger Brick Machines	Dry and Wet Pans	Smooth and Conical Roll Crushers
Down Delivery Tile Mills	Soft Clay Brick Machines	Trucks and Barrows
Oil Burning Equipment	Pug Mills	Kiln Fittings
Crude Oil Engines	Wood Moulds	

If you are in the market for any of the above we will be pleased to quote you.

Catalogs Upon Request

CHICAGO BRICK MACHINERY CO.

20 W. Jackson Boulevard CHICAGO, ILL.

KING MIDAS

Had he owned and operated a Paving Brick Plant, or any other kind of clay products plant, at the time he received his proverbial golden touch, he would not have had to exercise his power, if he had operated a Powell Patented Shale or Clay Planer.

The remarkable saving in cost of getting in shale or clay, would doubtless have satisfied Midas, so that he would have put his touch on some other part of the plant other than the bank.

Know the Arbuckle first



For proof of the above statement, ask the man who operates one.

Having his raw material **cut up into fine pieces** and **automatically loaded into cars** for haulage to storage bin, at a very **small cost per ton,** is an item which would be very much appreciated by most manufacturers.

Advantages which follow the above results are: **Reduction of wear and tear on Dry Pan from one-half to three-quarters; the saving of all pit laborers, with the exception of one,** who is required to operate the Planer; **a perfect mixture of the bank from top to bottom;** a saving of all explosives formerly used; **increased capacity** and **better product.** These are also items which the manufacturer would appreciate.

The Goose that laid the golden egg every day "did not have anything on" the Powell Patented Shale and Clay Planer; built in sizes to handle your proposition from a two-foot surface clay bank to a hard shale bank 100 feet high. Any capacity delivered that is required.

Correspondence Solicited.

ARBUCKLE & COMPANY

EXCLUSIVE MANUFACTURERS

Rushville, Indiana, U. S. A.

Infringements will be promptly and vigorously prosecuted

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

When You Send a Tip to Anyone in the List Tell Them You Saw Their Advertisement in "Brick and Clay Record."

Index of the Clay Product Directory

BLOCK OR TILE (HOLLOW)
Evans Clay Mfg. Co., Uhrichsville, O. 3
Keller Brick Co., The, Cuyahoga Falls, O. 8

BRICK (COMMON)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 7
Keller Brick Co., The, Cuyahoga Falls, O. 8
Metropolitan Paving Brick Co., Canton, O. 6

BRICK (FACE)
Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
American Enameled Brick & Tile Co., New York, N. Y. 8
Ironclay Brick Co., Columbus, O. 7
Bradford Pressed Brick Co., Bradford, Pa. 7
Hocking Valley Pro. Co., Columbus, O. 7
Hydraulic Press Brick Co., St. Louis, Mo. 8
Belden Brick Co., Canton, O. 7
Keller Brick Co., The, Cuyahoga Falls, O. 8
Kimbell Brick Co., S. S., Chicago, Ill. 8
McArthur Brick Co., McArthur, O. 8
Stark Brick Co., Canton, O. 8

BRICK (FIRE)
Alsey Brick & Tile Co., Alsey, Ill. 4
Brighton Fire Brick Co., New Brighton, Pa. 3
Chicago Retort & Fire Brick Co., Chicago, Ill. 3
Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, O. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3
Maurer & Son, H., New York City. 3
Mexico Brick & Fire Clay Co., Mexico, Mo. 4
Jos. Soisson Fire Brick Co., Bolivar, Pa. 3
Southern Fire Brick & Clay Co., Chicago. 4
St. Louis Vit. & Fire Brick Co., St. Louis, Mo. 4

BRICK OR BLOCK (PAVING)
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 7
Barr Clay Co., Streator, Ill. 7
Bessemer Limestone Co., Youngstown, O. 5
Big Four Clay Co., Canton, O. 6
Carlyle Paving Brick Co., Portsmouth, O. 6
Clinton Paving Brick Co., Clinton, Ind. 5
Danville Brick Co., Danville, Ill. 6
Deckman-Duty Brick Co., Cleveland, O. 5
Hamburg Vit. Brick Co., Philadelphia, Pa. 6
Harris Brick Co., Cincinnati, O. 5
Hocking Valley Brick Co., Columbus, O. 6
Mayer Brick Co., C. P., Bridgeport, Pa. 4
Metropolitan Paving Brick Co., Canton, O. 6
Murphysboro Paving Brick Co., Murphysboro, Ill. 4
Purington Paving Brick Co., Galesburg, Ill. 6
Shawmut Paving Brick Co., Shawmut, Pa. 6
Sterling Brick Co., Olean, N. Y. 4
Terre Haute Vit. Brick Co., Terre Haute, Ind. 7
United Brick Co., Conneaut, O. 5

CLAYS (FIRE, TERRA COTTA AND TILE)
Quinn, John, Houtzdale, Pa. 4

DEALERS
American Clay & Cement Corp., Rochester, N. Y. 7
Bonner & Marshall Brick Co., Chicago, Ill. 7
Kimbell Brick Co., S. S., Chicago, Ill. 8
Globe Brick Co., East Liverpool, O. 8

FIRE PROOFING
Metropolitan Paving Brick Co., Canton, O. 6

RAGGLE BLOCKS
Kimbell Brick Co., S. S., Chicago, Ill. 8

REFRACTORIES
Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, Ohio. 3
Evans Clay Mfg. Co., Uhrichsville, O. 3

SALT GLAZED BRICK
Stark Brick Co., Canton, O. 8

SEWER PIPE AND BRICK
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (DRAIN)
Evans Clay Mfg. Co., Uhrichsville, O. 3

TILE (FLOOR)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (PROMENADE)
Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (ROOFING)
National Roofing Tile Co., Lima, O. 7

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press Bk. Co., St. Louis, Mo.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everhard—Everhard Co., Massillon, O.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hypo—Hebron (Ind.) Clay Pro. Co.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
M-i-t-u-s-a—Brush-McCoy Pottery Co., Zanesville, Ohio.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Nuyoco—New York Clay Pro. Co., Van Deventers, N. J.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Saraband—Hydraulic-Press Bk. Co., St. Louis, Mo.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, Connellsville, Pa. *Sales Office,* Bolivar, Pa.

J. B. Hammond, Sales Manager

The Evans Clay Manufacturing Co.

Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

AJAX
FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

208 S. La Salle St., CHICAGO

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

MANUFACTURERS OF

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. Cleveland, Ohio

How to Analyze Clay

A practical work for practical people. A Text Book for Clay Analysis, by Holden M. Ashby, Prof. of Organic Chemistry, Harvard Medical College, and Instructor Chicago Night School of Chemistry. An Aid to Beginners and full instructions for making clay analysis. 64 pages, with illustrations. Postpaid to any address in the world, $1.00.

Brick and Clay Record

445 Plymouth Court, Chicago, Ill.

Mexico Brick & Fire Clay Co.

Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining, Cupola Blocks, Locomotive Linings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

Office 306 Wainwright Building ST. LOUIS, MO.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You

WRITE US

ALSEY BRICK & TILE COMPANY

ALSEY, ILLINOIS

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

C. P. MAYER BRICK CO.

BRIDGEVILLE, PA.



The Mayer Blocks will stand a better abrasion test than the ***Best Paving Blocks made.***

Sterling Brick Company

OLEAN, N. Y.

Manufacturers

OLEAN BLOCK

Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
None Are Better

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana



Bind Each Copy of Brick and Clay Record

Do not wish for a back number of "Brick and Clay Record"—have it in your fingers' reach — in a neat, attractive bound volume.

Our Self-Binder Makes it Easy

Stick each issue of the Magazine in the binder as it comes in—a simple twist of the wrist does it—no holes to punch—no springs, locks, clamps, laces, strings—no glueing—a turn of a screw—that's all.

The Self-Binder holds one copy or a dozen—the entire volume, and does it securely, neatly, and opens out flat.

A Special Price to Subscribers

Any new or old subscriber, by paying for his subscription in advance can receive one of these Self-Binders (Price $1.50) by paying 75 cents additional or $2.75 for a year's subscription. To those who have already paid their subscriptions, the subscription will be advanced. To those who only want the binder, the price is $1.50 postpaid.

A copy of the Semi-Annual Index, Vol. XLV, from July to December, 1914, will be given free with every binder.

BRICK AND CLAY RECORD
445 Plymouth Court CHICAGO

THE DECKMAN-DUTY BRICK CO

CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O. *General Office* Columbus, O.

Output 15,000,000 Annually

Hamburg Vitrified Brick Company

PAVING BLOCKS AND VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

The Carlyle Paving Brick Co.

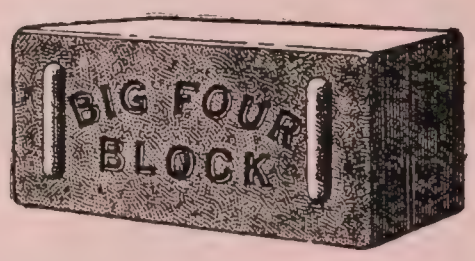
Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.

City National Bank Bldg. Canton, Ohio

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Alton Brick Company

Makers of High Quality Brick for

Roadways and Permanent Buildings

Repressed and Dunn Wire-Cut-Lug Block.

ALTON, ILLINOIS

PAVING SIDEWALK
BUILDING FOUNDATION

BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Ironstone Block

"Often Rattled But Never Embarrassed"

Repressed and Dunn Wire-Cut-Lug

Terre Haute Vitrified Brick Co.

Terre Haute, Ind.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-
Masons' Supplies—All Indestructible
Building Materials

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building

Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.
CUYAHOGA FALLS, O.

ALLIANCE RUG BRICK

Excel all other brick as to texture and beauty of coloring. The chromatic scale of colors runs through the beautiful Rug-texture faces of these brick, most of the brick showing **three** or **four** or **more** of the seven primary colors. One of the most popular sellers in America today.

Mr. Agent, this brick will get you business. Write for samples.

The Alliance Brick Co., Alliance, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.
CANTON, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS
Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

L. D. BINYON, President — H. L. MATZ, Vice-President — JAS. A. HOGAN, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

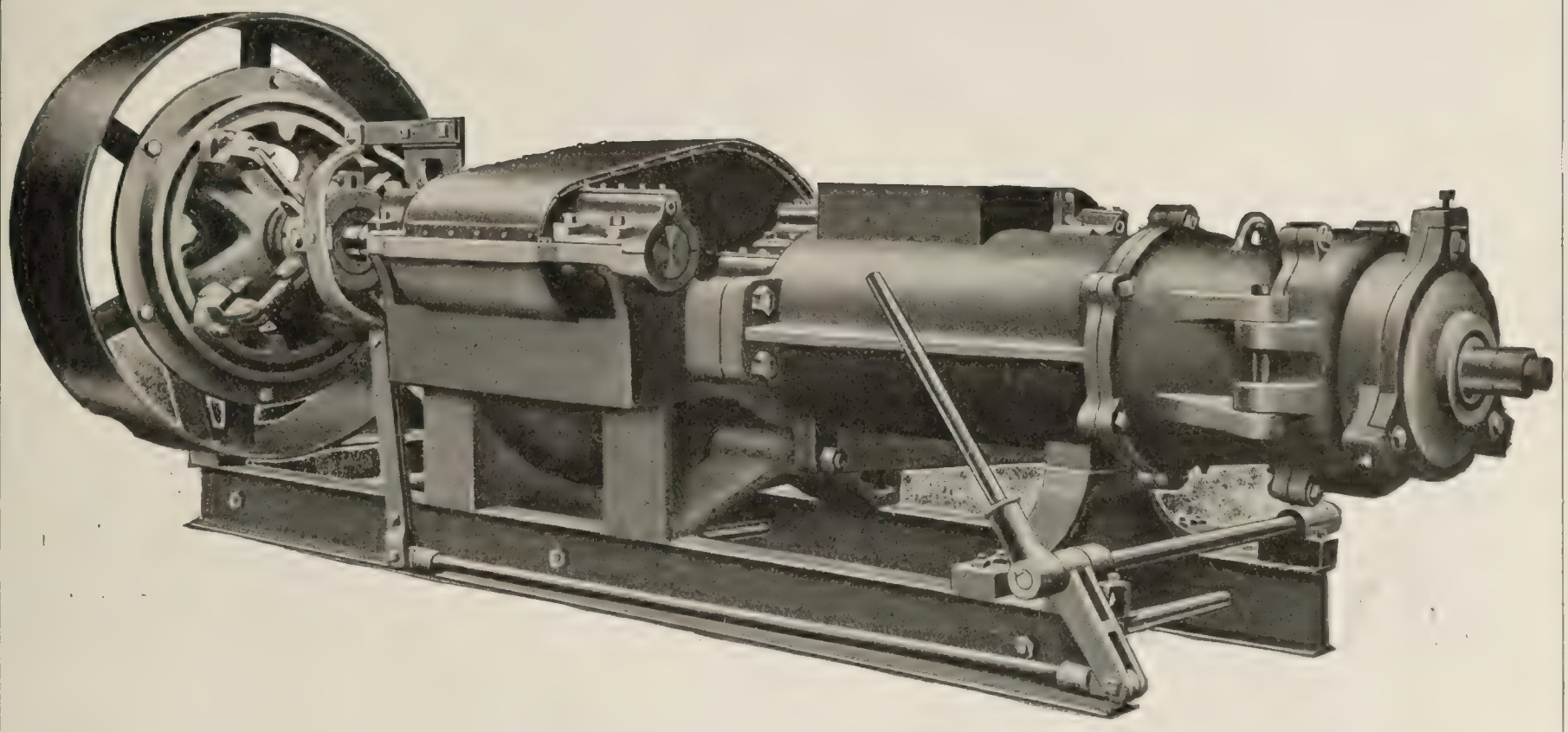
Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.

IF MARKED BREWER IT'S GOOD

A NEW HORIZONTAL

DRAIN TILE MACHINE



The Brewer No. 88

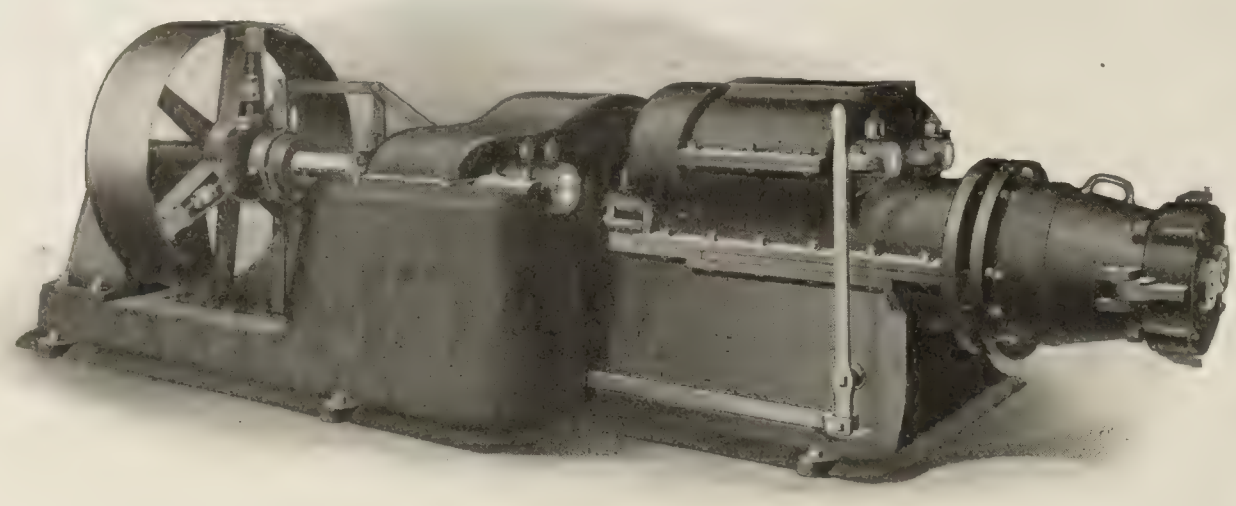
Cut Gears, covered, and running in oil. Self-Oiling Bearings. High Efficiency Expressing Augers. Hammered Steel Shafts. Heavy Duty Friction Clutch. Nothing as well built ever offered before in the Drain Tile Machinery Line.

We build seven different patterns of Drain Tile Machines, including Horizontal, Upright and Down Delivery.

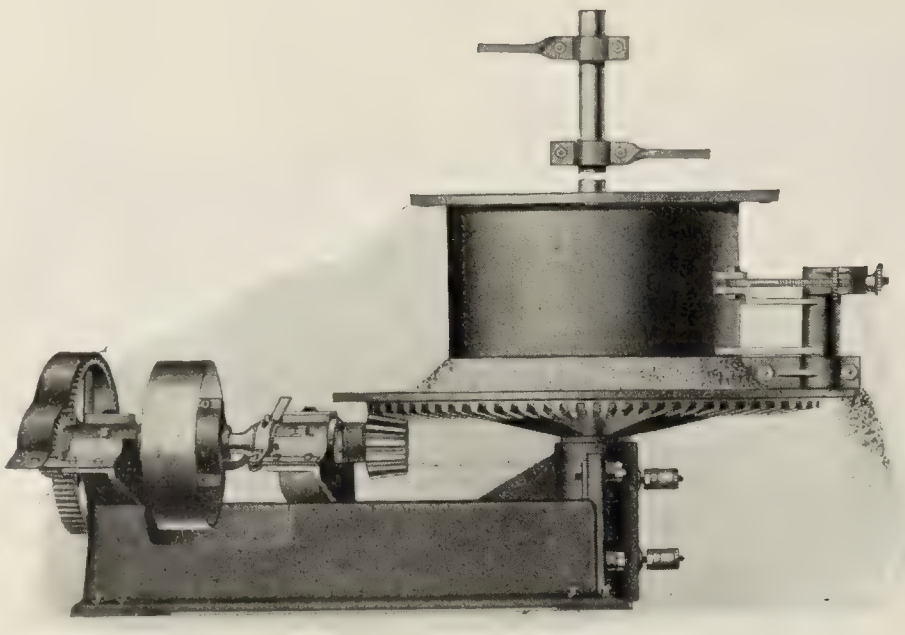
Also a large line of Crushers, Disintegrators, Pug Mills, Granulators, Feeders, Hoists, Automatic Cutters, etc., etc.

Write for Complete Catalog

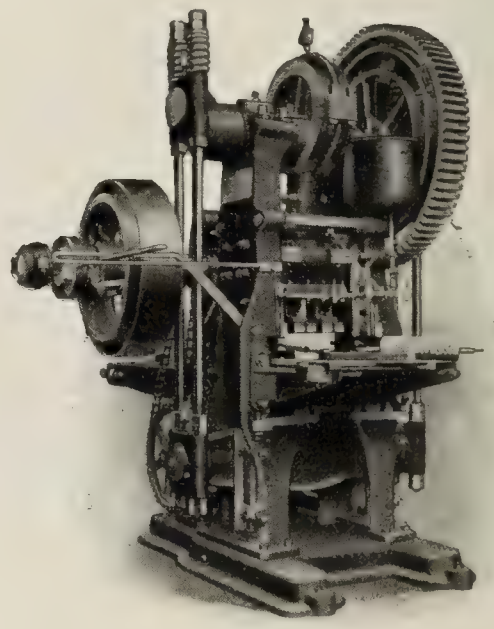
H. BREWER & COMPANY, Tecumseh, Mich.



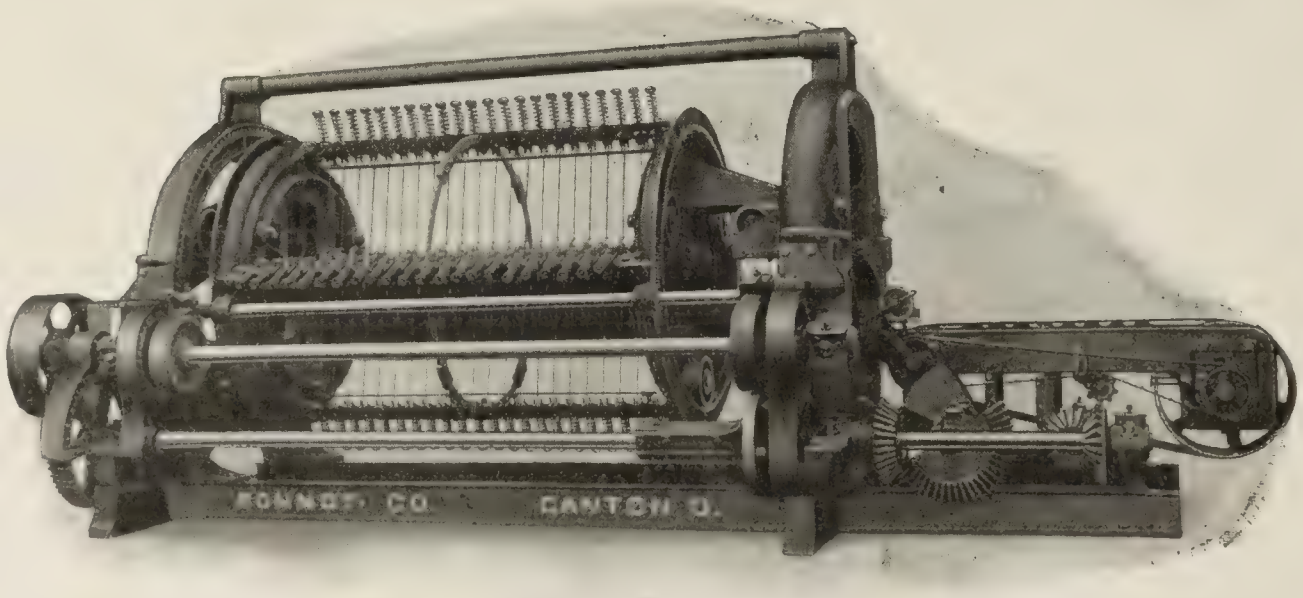
NO. 17 HOLLOW-WARE MACHINE, capacity 100-125 tons per day.



CLAY FEEDER



BONNOT REPRESS



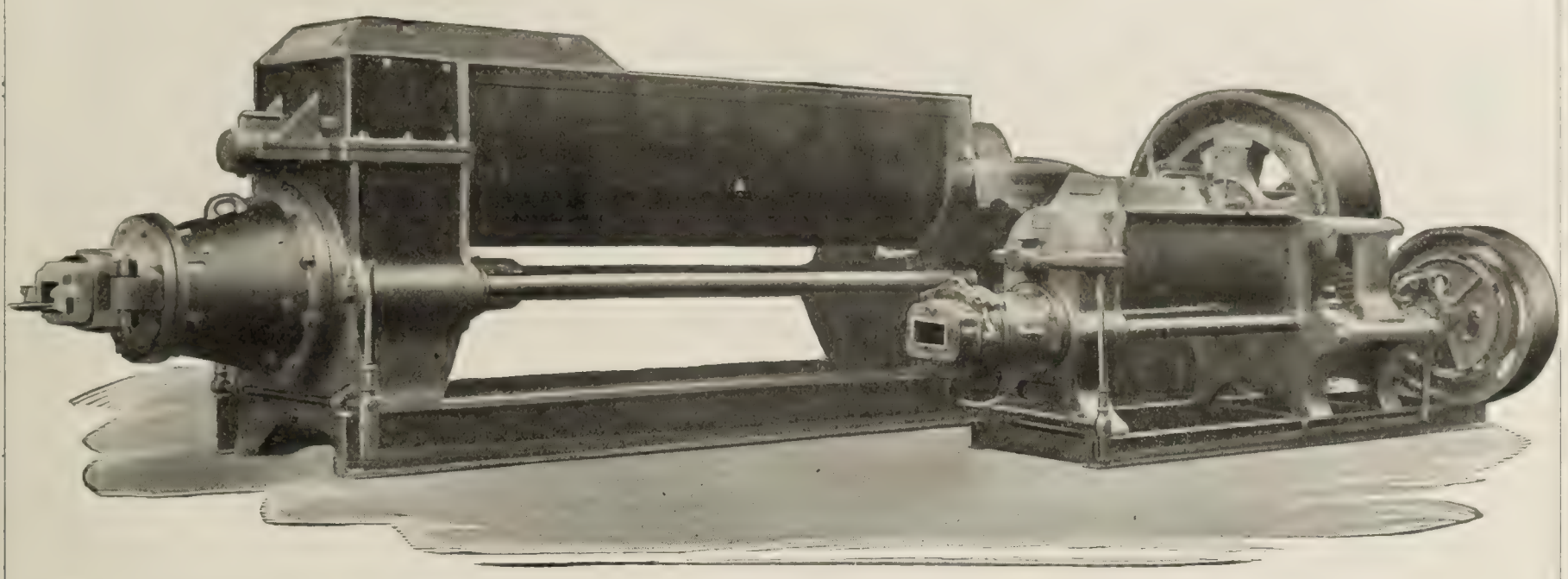
ROTARY AUTOMATIC CUTTING TABLE

THE BONNOT COMPANY

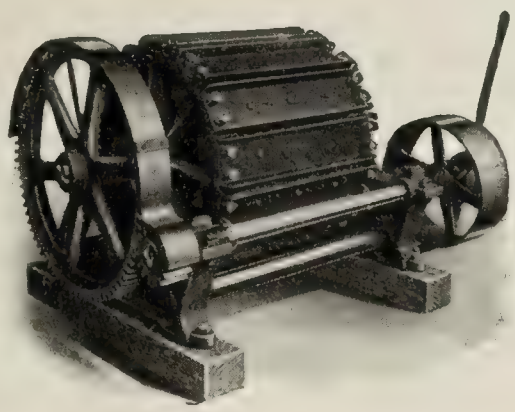
CANTON, OHIO

909 N. Y. Life Bldg.
KANSAS CITY, MO.

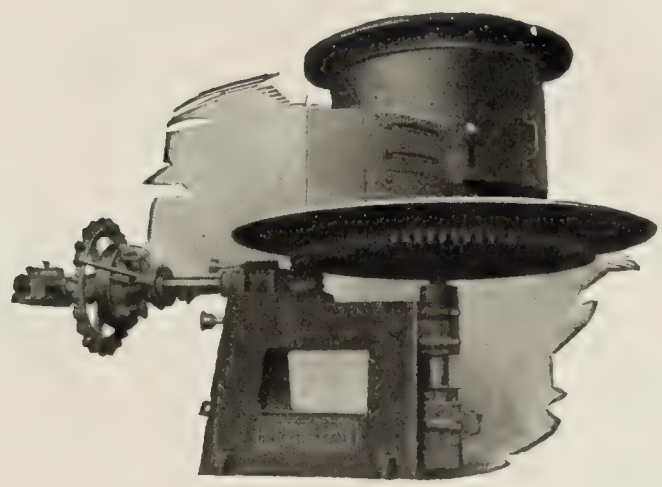
211 Higgins Bldg.
LOS ANGELES, CAL.



The UNION Brick Machine is built in twenty-two sizes and patterns—direct geared and countergeared. They are used in a large percentage of the most successful paving brick and building brick plants in the country.



A dependable testing rattler. Complies fully with the National Paving Brick Manufacturers' Association specifications.



An improved automatic disc feeder with renewable wearing plate and renewable thrust bearing. Sprocket chain or belt drive.

E. M. FREESE & CO.

130 SOUTH STREET GALION, OHIO

Dependable Machinery of Proven Efficiency

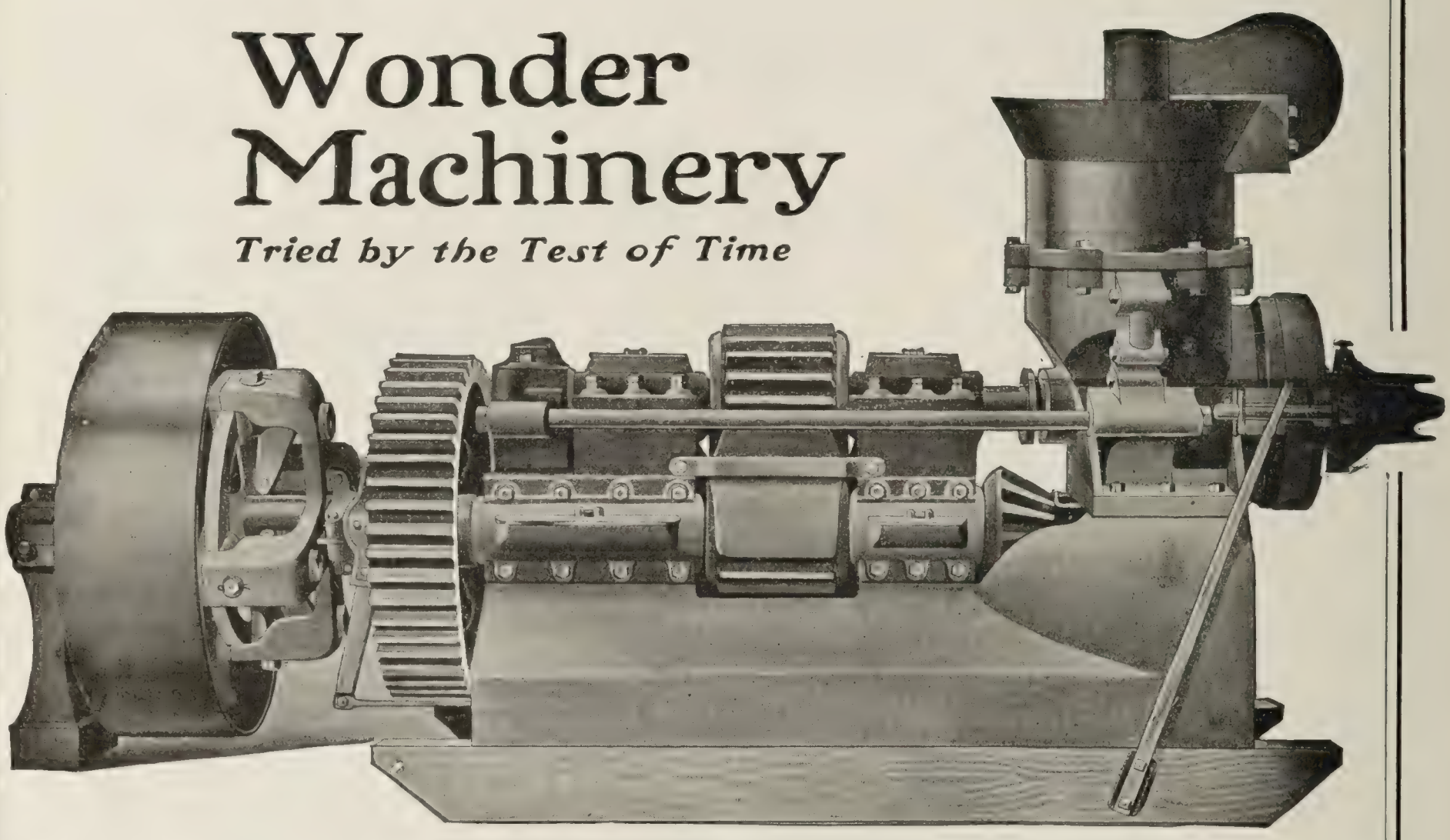
YOUR GOOD MONEY

can easily go to waste, through a little mistake in buying machinery. You can spend too much money for what less would buy; or you can buy that which will prove inefficient, unsatisfactory and undesirable.

You can secure the most value for your money in

Wonder Machinery

Tried by the Test of Time



Brick, Tile and Hollow Block Machinery of every description. Granulators, Pug Mills, Disintegrators, Crushers, Cutters, Dry Pans, etc. Write for catalog

Wonder Machinery saves operating costs, reduces repair bills and eradicates troubles. **Don't let the first cost worry you**

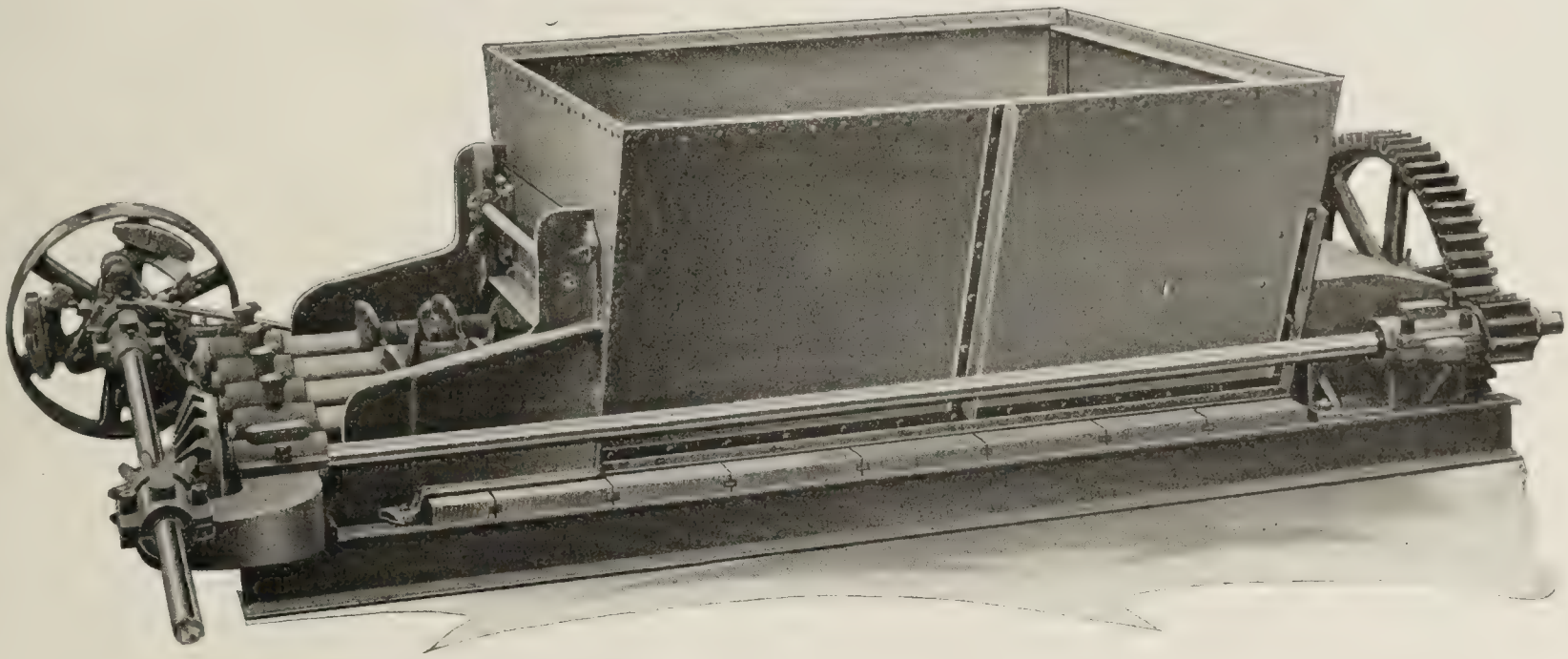
ASK US FOR PRICES NOW

WALLACE MFG CO. FRANKFORT, INDIANA

ONE Brick Machine may look as good as another, may be built first class mechanically and of ample weight, and still prove a disappointment.

It is the hidden effort and experience back of the Steele Machinery which give the results.

A proper relation of parts makes the difference between the finished and easy output of the Steele Machinery and the labored effort of improperly designed machinery.



The Steele Even Feeder is extra heavy—weighing 6500 pounds—at the same time it is so well balanced that it requires very little power. The connecting gears are spur type and run in oil.

These Feeders are giving good results where others failed.

J. C. STEELE & SONS

STATESVILLE, N. C.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany all orders.

WANTED—HELP.

WANTED—A man who thoroughly understands the promotion and installation of sub-irrigation projects. To such a man a first-class proposition is open. Salary and commission. Address: The International Brick Co., El Paso, Texas. 5-2-2.

WANTED—By large manufacturer, a salesman to sell belting on commission. Address: 6-DA, care of "Brick and Clay Record." 6-1

WANTED—POSITIONS.

POSITION WANTED—Young man, 30, having 10 years' experience as pressed-brick setter and burner, is open for position. Can deliver the goods and would like position with good, live company, or new firm just starting. Address: 6-A, care of "Brick and Clay Record." 6-1-P

POSITION WANTED—Superintendent at present engaged desires change; paving block, building brick and fireproofing. Excellent references as to ability and character. Any firm desiring high-class man address: 6-B, care of "Brick and Clay Record." 6-1-P

WANTED—Position as superintendent or salesman. Twenty-four years' successful practical experience handling large plants manufacturing sewer-pipe, conduits, firebrick, face brick and fireproofing. A-1 references. Address: 6-R, care of "Brick and Clay Record." 6-1-P

POSITION WANTED—As superintendent, practical and experienced; all processes, clay and shale; building, common, paving, fire and other brick and tile. Address: 6-G, care of "Brick and Clay Record." 6-1-P

WANTED—Position as superintendent, 20 years' experience in the manufacture of common brick, face brick, paving block, roofing tiles and hollow ware. Several years with German and American kiln builders, designing, building and operating continuous kilns and dryers. Expert burner, best references. Address: 5-BB, care of "Brick and Clay Record." 5-2-3P.

WANTED—Position as manager of building or paving brick plant by high-grade young man familiar with every phase of the work. Address: 6-F, care of "Brick and Clay Record." 6-1-P

WANTED—Position as assistant to manager of structural material business by ceramic engineer with ten years' experience. Address: 6-D, care of "Brick and Clay Record." 6-1-P

WANTED—Position as foreman or head burner, 20 years' experience, any kind of kiln; continuous my specialty. Address: 6-P, care of "Brick and Clay Record." 6-1.

WANTED—Position as superintendent of plant manufacturing fireproofing, heavy building block or sewer pipe. Have had 20 years' experience, now employed and giving good satisfaction to employer. Address: 5-BJ, care of "Brick and Clay Record." 5-2-1P.

WANTED—Position as superintendent of brick plant, face brick preferred. Thoroughly familiar with gas-fired continuous and down-draft kilns. Best of references. Employed, but desire change. Address: 5-BF, care of "Brick and Clay Record." 5-2-1P.

POSITION WANTED—Superintendent or master mechanic, experienced in all grades of brick, also building and drain tile. Can balance dies to prevent checking in drying. Address: 5-BE, care of "Brick and Clay Record." 5-2-1.

EQUIPMENT WANTED.

WANTED—Set conical rolls. Must be cheap and in good condition. State make and how long in use. Address: 6-O, care of "Brick and Clay Record." 6-1

FOR SALE—CLAYWORKING PLANTS.

SHERIFF'S SALE—June 19, 1915—25,000 daily capacity brick plant, fully equipped, 20 acres clay, producing high-grade face brick and pavers, 4 acres fine moulding sand, 12 ft. thick, opened for operation; splendid shipping facilities. Located at Crooksville, Ohio, one of the best clay manufacturing towns in the country. Full particulars write Tom O. Crossan, Attorney, New Lexington, Ohio. 5-2-2.

FOR SALE—First-class medium sized plant, suitable for sanitary ware, white ware or stoneware. Practically good as new, thoroughly equipped. Now in operation. Best built plant in Ohio, plenty of labor, gas fuel, shipping facilities the best. Will be sold cheap, if at once. Address: 6-MC, care of "Brick and Clay Record." 6-1

FOR SALE—A favorably located brick plant and coal mine in eastern Ohio; excellent shale and fine coal. Capacity 25,000 brick per day. On leading railroad system and near market. Address: 5-BN, care of "Brick and Clay Record." 5-2-4P.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Complete mud brick plant, whole or in part, good engine, boiler, clay machinery, 30,000 pallets, etc. Very cheap if sold soon. Ilias Walter, Upper Sandusky, O. 5-3P.

FOR SALE CHEAP—Tile plant. Excellent clay; 3 kilns, 2 sheds, double decked. All necessary tools. Good reasons for selling. Delta Brick & Tile Co., Delta, Iowa. 6-1P

FOR SALE—Brick plant, good clay. Soft-mud plant. Good demand for shipping brick. Wm. Hodkinson, Beaver City, Neb. 5-2-1

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR SALE—SECOND-HAND MACHINERY.

FOR SALE

One 12x12 slide valve engine with 84 in. flywheel, also 72x18 band wheel. This engine has been completely overhauled and rebabbitted throughout; new governor and throttle valve, and is in first-class condition. One double mold Bonnot repress, practically new, run less than three months. One Chambers cutter for end-cut brick; in good condition, run less than one year. One Rumely traction engine, single cylinder, boiler insured under the Fidelity and Casualty Co., and allowed 110 lbs. working pressure and pronounced in good condition by their inspector. One steel boiler stack, 65 ft. high by 42 in. diameter, 10 gauge sheet steel. Stack was used about one year, and taken down account putting in new boilers and it was not large enough for them. Address: Hydraulic-Press Brick Co., Chamber of Commerce Bldg., Chicago, Ill. 5-2-2.

FOR SALE—SSS soft-mud brick machine, capacity 60,000 per day. Arnold-Creager Co. (New London, Ohio) type; used one season. No. 3 W. H. Williams & Co. (St. Louis, Mo.) pulverizer and crusher. Horizontal pugmill 3x10 inches, Martin (Lancaster, Pa.) type. Henry Martin (Lancaster, Pa.) mould sanding machine. Address: Drovers & Mechanics National Bank, York, Pa. 3-26P.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and ironworking machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—125 h. p. horizontal boiler, 80 h. p. slide-valve engine, "555" Raymond auger brick machine, Raymond semi-automatic side-cut cutting table, Acme auger machine, Bensing end-cut cutting table, pugmill, disintegrator, piano wire screen, 4,000 brick pallets, together with all shafting, pulleys, belting, dies, trucks, dump carts, tools, etc., suitable for operating a plant of 30,000 brick per day. Will all be sold at a bargain. Address: 6-H care of "Brick and Clay Record." 6-1

FOR SALE CHEAP—7 ft. American dry pan, No. 9 Brewer tile and hollow ware machine, 8 ft. pugmill, elevator with shaft and pulleys, piano wire screen, one main line shaft and various smaller equipment. Address: 6-M, care of "Brick and Clay Record." 6-1

FOR SALE—Cheap, one second-hand American Clay Machinery Co.'s Special Giant auger machine, equipped for making fireproofing and hollow ware. Address: 6-JA, care of "Brick and Clay Record." 6-2

FOR SALE, cheap if sold quickly:

1—14 inch by 18 inch throttling engine, 105 h. p. at 100 lb. steam pressure, complete with all fixtures, built by Chandler & Taylor Co., Indianapolis, Ind.

1—Tapered screen 42 inch to 36 inch by 10 ft. long covered with 16 mesh steel cloth, complete with pulley and bearing.

1—Worm gear belt driven freight elevator complete, built by the Otis Elevator Co.

4—Corliss valve steam traps, No. 4, built by Lindstrong, Allentown, Pa.

1—Yellow pine tank, 6 ft. diameter, 5 ft. 5 in. deep.

4—Yellow pine tanks, 9 ft. diameter 6 ft. 5 in. deep.

1—Yellow pine tank, 6 ft. diameter, 4 ft. deep.

1—Yellow pine tank, 12 ft. diameter, 7 ft. 6 in. deep.

American Chemical Co., East Liverpool, O. 6-1

FOR SALE.

Style O Thew Steam Shovel, Martin 32,000 capacity pipe rack Brick Dryer with steel pallets and cable conveyor all complete—used one season. Stevenson 9 ft. Dry Pan, Stevenson 8 ft. Wet Pan, Martin "A" and Arnold-Creager Brick Machines with mold sanders. One steel side Dump Car, 1-yard capacity, one Winding Drum, 125 steel double deck Dryer Cars with steel decks. One Freese Union Brick Machine with automatic cutter, Blake jaw crusher, 9x15 in. No. 3 Williams Hammer Crusher, Berg Dry Press, 4-mold. All in fine running order, priced separately and way down. C. H. Horton Co., Painesville, Ohio. 6-1

FOR SALE—All kinds of Clayworking Machinery, bargains in used engines, boilers, motors, brick and tile machines, dry pans, pug mills, cutting tables, anything you want. Two good fully equipped plants for sale. CLAYWORKERS EXCHANGE, Farmers Bank Bldg., Springfield, Ill. 5-tf.

FOR SALE—Practically new: One 40 h.p. and one 60 h.p. high pressure boiler, one 100 h.p. slide valve engine, 9 ft. American dry pan and clay elevator, No. 88 Brewer brick and tile machine, Fayet's end-cut cutting table, pulleys, shaft and boxing, Pulsometer steam pump No. 3, 8 ton of 16-lb. rails, 12,000 ft. double strength steam pipe. Address: W. E. Lyon & Co., Carthage, Ill. 5-2-TF.

Brick and Clay Record Classified Ads Are Result Producers

FOR SALE—Second-hand multigraph machine in first-class condition. Will make special time inducements. Address: 5-BP, care of "Brick and Clay Record." 5-2-1.

FOR SALE—Stockbridge crank shaper. New and not used. This is a 24-inch shaper with back gear, and patent two-piece crank with quick return motion. Price paid, $625.00, and must be sold. Address: 6-C, care of "Brick and Clay Record." 6-TF

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Vogan, Franklin, Pa. 4-TF

FOR SALE—Richardson repress used but little and practically as good as new. Great bargain. Address: 6-X, care of "Brick and Clay Record." 6-2P

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Horton soft-mud brick machine, good condition, price $200; other equipment one-half price. C. Fred Barr, Winchester, Va. 6-1P

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.,
PARK BLDG. PITTSBURGH, PA.

PATENTS.
Inventions protected.
Trade marks registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F St., Washington, D. C.

STEEL RAILS.
All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.
M. K. Frank, Pittsburgh, Pa.

RAILS, NEW AND RELAYING
All Sections—Lowest Prices
A few snaps
50 tons 12-lb. relay
100 tons 16-lb. relay
200 tons 20-lb. relay
"ZELNICKER" ST. LOUIS
Get our monthly bargain bulletins. 6-4

BETTER to read a dozen ads you are not interested in, than to miss one that would be of value to you.

RAILS
SMALL ORDERS GIVEN SPECIAL ATTENTION
40, 56, 60, 70, 75, 80, 85 & 90 lb.
RELAYING RAILS
FOR SIDINGS, SPURS, ETC.
8, 12, 16, 20, 25, 30, 35, 40 & 45 lb.
NEW STEEL RAILS
FROGS AND SWITCHES
SECOND-HAND Rails, cut to any length desired, for BRACING, UNDERPINNING, LINTELS, concrete REENFORCING, BUCKSTAVES. All kept in stock for quick shipment
RICHARDSON & CO., INC.
1103 Bessemer Bldg.,
PITTSBURG, PA.
RAIL DEALERS

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick
BELDEN BRICK CO.-CANTON

THESE SIGNS ARE SHEET STEEL
with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

WE SELL THESE SIGNS
at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

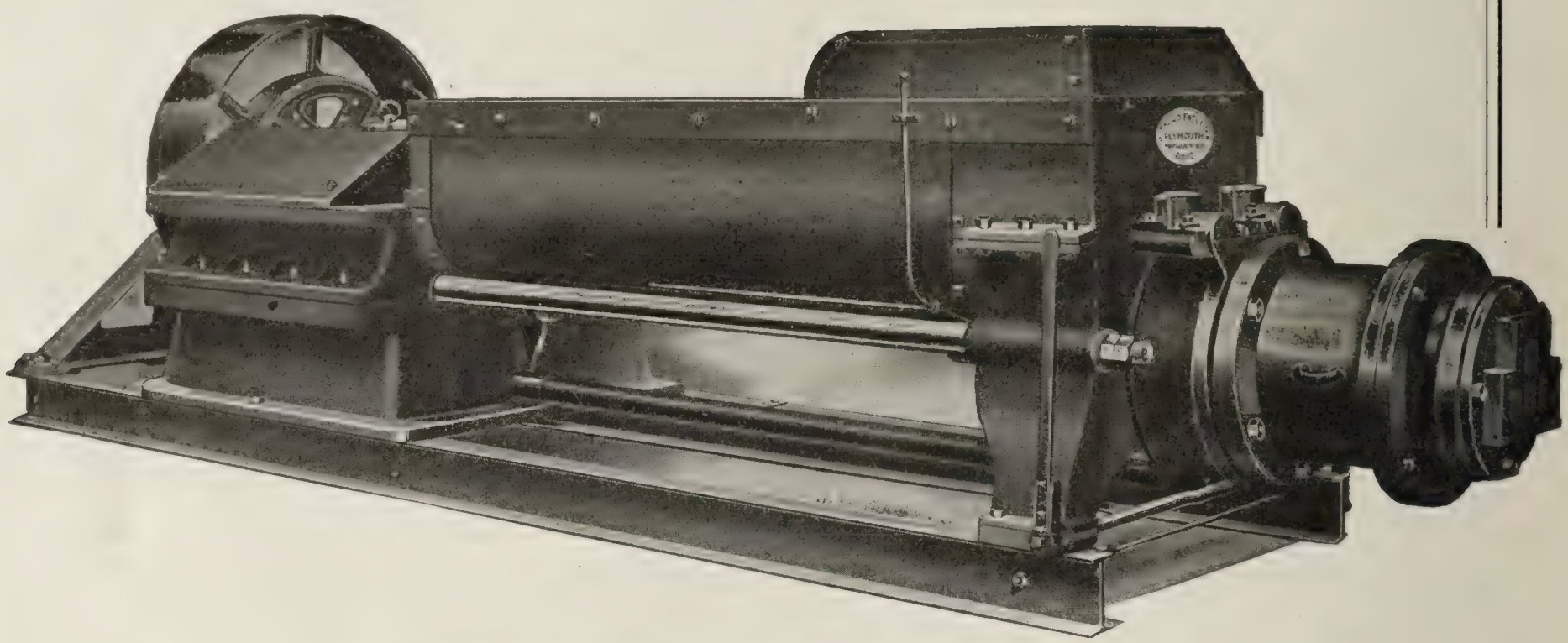
Send your orders to

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

The Fate Quality

Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

The Special Premier has met some very Formidable Foes in the way of Stubborn Working Clays and Fought vs. Great Odds, since it Championed the Cause of the Clay Worker in his attempt to produce Merchantable Hollow Ware at a living Profit. However, it still stands today as the "Premier" of Hollow Ware Machines and ever ready to continue its Campaign for the Relief of the Distracted Clay Worker.

It is a splendidly built Machine, embodying the mechanical principles and ideas necessary in a successful machine, one that will produce a Good Capacity of Good Ware. That is what it has done where others have failed.

Our entire line of Clay Working Equipment is in keeping with the Special Premier. It is to Your Interest to write us if you contemplate purchasing anything new.

The J. D. Fate Company Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geljsbeek
Eastern Office: Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative
Manufacturers Equipment Company, Dayton, Ohio, Sales Agents

The Fate Quality

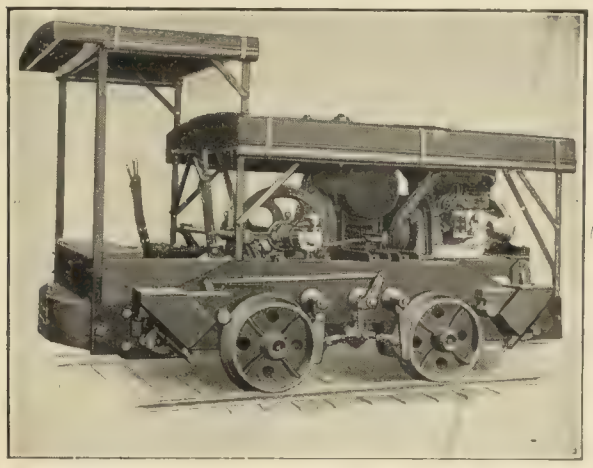
Quality hinges on two things—mechanical perfection and the best material.

These factors enter into the product of the House of Fate.



Plymouth Gasoline
Industrial Locomotives





Equipped with Continental 4-Cylinder Motor, Thermo-Syphon Cooled, Schebler Carburetor, Bosch High Tension Magneto, Hyatt Roller and New Departure Ball Bearings, Brakes and Sand on All Four Wheels.

Any Gauge — 20-inch to Standard.





The above views tell in a pictorial way some of the work our Gasoline Locomotives are doing—in a most satisfactory manner—from Long Island to Honolulu, from Nova Scotia to Texas, and at a surprisingly low cost for operation and maintenance.

Let us send you our descriptive catalog and tell you of an eight-year-old boy who runs one.

The J. D. Fate Company - - Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., S. Geijsbeek
Eastern Office, Woolworth Bldg., New York City, Jas. A. Ridgeway, Representative

Another Well Known Plant Uses

Brown Pyrometers



View of a few of the 30 kilns.



Indicating Instrument for Burner.

The Terre Haute Vitrified Brick Co., Terre Haute, Ind., Mr. J. M. Hoskins, Vice-President, has a Brown Pyrometer equipment installed on 30 kilns. An indicating instrument is located in the burner's house and a recording instrument in the office.

There is no man who knows the paving brick business better than Mr. J. M. Hoskins, and a recent letter from him, telling how both his plant, and his head burner have been benefited by this installation, would interest you. We should be glad to send you a copy of this letter. Also photographs of Brown Pyrometer installations at well known plants. They are sent for the asking.

THE BROWN INSTRUMENT CO.

ESTABLISHED 1860

PHILADELPHIA, PA.

NEW YORK PITTSBURGH CHICAGO

BRICK and CLAY RECORD



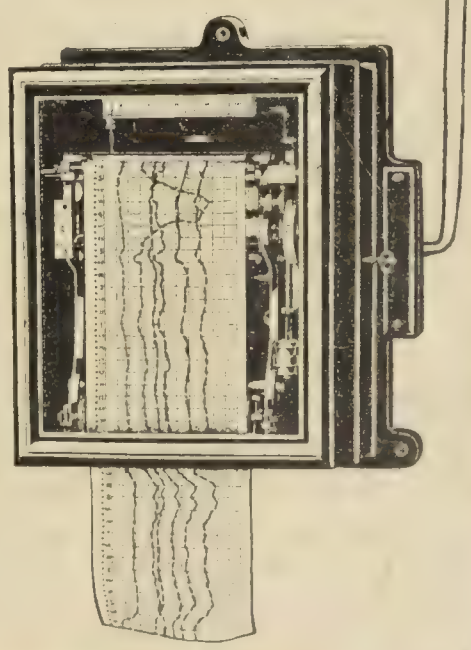
HERAEUS LE CHATELIER

"The ULTIMATE PYROMETER"

BECAUSE—the superior accuracy of Heraeus Thermo-Couples is not in any way impaired by length of service.

BECAUSE—the extra thirty percent in weight, the extra six inches in length of our platinum-rhodium wires, doubles the life and reduces the cost of maintenance to a minimum.

BECAUSE—their extremely high resistance (about 500 ohms) makes possible the use of both indicating and recording instruments on the same Thermo-couples, allowing the use of a central indicating system for the burners and a recording system for the superintendent in his office.



We Supply Any Pyrometer Installations Required

"MADE FOR YOU—not MADE TO DO"

Let Us Figure on Your Requirements

CHARLES ENGELHARD

30 Church Street NEW YORK

Vol. XLVI, No. 12 Chicago June 15, 1915

WELL ER-MADE

Do You Want To Cut Costs?

Here is what one of our customers writes us:

> "The Scrap Conveyor you sold us a short time ago has been in satisfactory use long enough to know what it will do. It cost less than $500.00 installed and is saving us from $3.50 to $4.50 per day."

On another outfit for handling green material from Cutting Table to Dryer Cars they told us:

> "This little machine, costing less than $400.00, saves us from $15.00 to $30.00 per day, besides increasing our output and decreasing breakage."

Do you want to cut down your expense?

Do you want to speed up your production without increasing expenses?

If you do, write and tell us your conditions and if we can help you we will; and if not, we will be frank in telling you so.

WE BUILD AND KNOW HOW TO BUILD

Elevating, Conveying and Power Transmitting Machinery

Weller Manufacturing Company

Chicago

NEW YORK	BALTIMORE	AKRON	ST. LOUIS	DALLAS	SAN FRANCISCO
50 Church St.	Garrett Bldg.	10 W. Buchtel Ave.	710 Railway Exchange	711 Main St.	316 Rialto Bldg.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

Trautwein DRYERS **Facts——**

Competition Fixes Your Selling Price.

Labor and Raw Materials Are Also Largely Fixed.

Manufacturing Costs Are Determined By the Efficiency of Your Plant.

Are You Cutting the Corners?

Trautwein Engineers and Trautwein Dryers Do

Trautwein Dryer & Engineering Company

SUPERVISION, INSPECTION, TESTS

417 South Dearborn Street, Chicago

BURNING KILNS

DESIGNED AND BUILT BY EXPERTS IS OUR SPECIALTY

Let Us Send You Our Literature

Claude Smith Company

Kiln Builders

Plymouth Building, Chicago, Ill.

Service to Clayworkers

Alliance Brick Co.....P- 8
Alliance Clay Pro. Co..P- 5
Alsey Brick & Tile Co..P- 3
Alton Brick Co.....P- 4
American Blower.....1118
American Clay & Cement Corp. .....P- 7
American Enameled Brick & Tile Co.....P- 8
American Process Co...1168
Ambursen Co.....1178
Atlas Car & Mfg. Co...1155

Baird Machine & Mfg. Co. 1158
Baldwin Loco. Wks....1156
Ball Engine Co. (Erie Steam Shovels) 1161
Barr Clay Co.....P- 4
Belden Brick Co.....P- 8
Big Creek Colliery Co..1164
Big Four Clay Co.....P- 6
Bessemer Limestone Co.P- 5
Bradford Pressed Bk. Co.P- 7
Bonner & Marshall.....P- 7
Broderick & Bascom...1149
Brown Instrument Co...1151
Bruce-Macbeth Eng. Co.1150
Buckeye Rolling Mill Co.1149

Canton Grate Co.....1155
Carlyle Paving Bk. Co..P- 6
Ceramic Sup. & Cons..1159
Chambers Bros. Co....1117
Chase Fdry. & Mfg. Co.1168
Chicago Brick M. Co...1163
Chicago Retort & Fire Brick Co. .....P- 4
Childs, O. J., Co.....1159
Cincinnati Frog & Switch Co. 1150
Classified Ads....1183-1184
Clearfield Mach. Shops..1148
Cleveland Alloys Co....1157
Clinton Paving Bk. Co...P- 5

Davenport Loco. Wks..1153
Danville Brick Co.....P- 5
Davis Fire Brick Co....P- 3
Deavitt, H. M.....1148
Deckman-Duty Brick Co.P- 5
Detroit & Cleveland....1157
Dewey Bros. 1148
Dover Fire Brick Co....P- 4
Dunn Wire Cut Lug Bk. Co. 1182

Eagle Iron Works.....1152
Eastern Machy. Co.....1181
Englehard, Chas. 1111
Estes, Inc., L. V.....1156
Evans Clay Mfg. Co....P- 4

Gandy Belting Co.....1165
General Traffic Assoc...1148
Gerlock, H. W.....1148
Globe Brick Co.....P- 8
"Gripwell" Pulley Covering Co. 1151

Hamburg Vit. Bk. Co...P- 6
Hardinge Bros., Inc....1152
Harris Brick Co.....P- 6
Hendrick Mfg. Co.....1151
Hinde & Dauch Paper Co. 1153
Hocking Valley Bk. Co..P- 5
Hocking Valley Pro. Co.1186

Advertising Cost

There has been a great deal said of late about the Advertising bills being paid by the consumer, but no argument could make the hard-headed business man believe that.

Suppose Advertising had not been practiced as it has during the past twenty-five years? What would the brickmaker have done? Stuck to the old ideas and methods?

Perhaps you will say that you would have heard of new methods and machinery without Advertising. Granted. But at what cost? No manufacturer can afford to mail out catalogs promiscuously, and circulars cost more for printing and mailing than does the Advertising display in a good trade paper.

No—Advertising of the right kind, such as you always find in the columns of "Brick and Clay Record," is a saving to the manufacturer because he thus exploits his product in the most economical manner possible.

And—**you** profit by it too, because at no cost to yourself you are put in direct touch with those who can help you to make a better product and to lower your manufacturing costs.

It's **your** loss if you don't read and absorb the Advertising in these columns.

The letter "P" preceding a number refers to the "Pink Section"

Hook Patent Kiln Co...1161
Hydraulic-Press Bk. Co..P- 7

Illinois Sup. & Cons. Co.1154
Ironclay Brick Co.....P- 7

Jackson & Church Co..1151
Johns-Manville Co. 1185

Keller Brick Co.....P- 8
Kimbell, S. S., Brick Co.P- 6
Kissel Motor Car Co....1162

Lehigh Portland Cement.1157
Link-Belt Co. 1152

Mail-Order Co. 1152
Main Belting Co.....1115
Manufacturers Eq. Co...1163
Marion M. Fdry. & S. Co. 1153
Marion-Osgood Co.....1168
Marion Steam Shovel Co.1165
Marsh-Capron Mfg. Co..1149
Martinique Hotel.....1160
Mathews Gravity Carrier.1179
Maurer & Son, Henry...P- 3
McArthur Brick Co.....P- 7
Mexico Bk. & F. Clay Co.P- 3
Metropolitan Pav. Bk. Co.P- 5
Mowrystown B. & T. Co.1159
Murphysboro Pav. Bk. Co.P- 6
Murray Iron Wks. Co...1153

National Roofing Tile Co.P- 7

Ohio Gal. & Mfg. Co...1168
Ohio Kiln Co.....1155

Pettigrew Foundry Co..1150
Pittsburgh Tile Mfg. Co.P- 7
Price Electric Co.....1150
Purington Pav. Bk. Co..P- 6

Quinn, John .....P- 3

Read & Day.....1153
Roessler & Hasslacher..1159

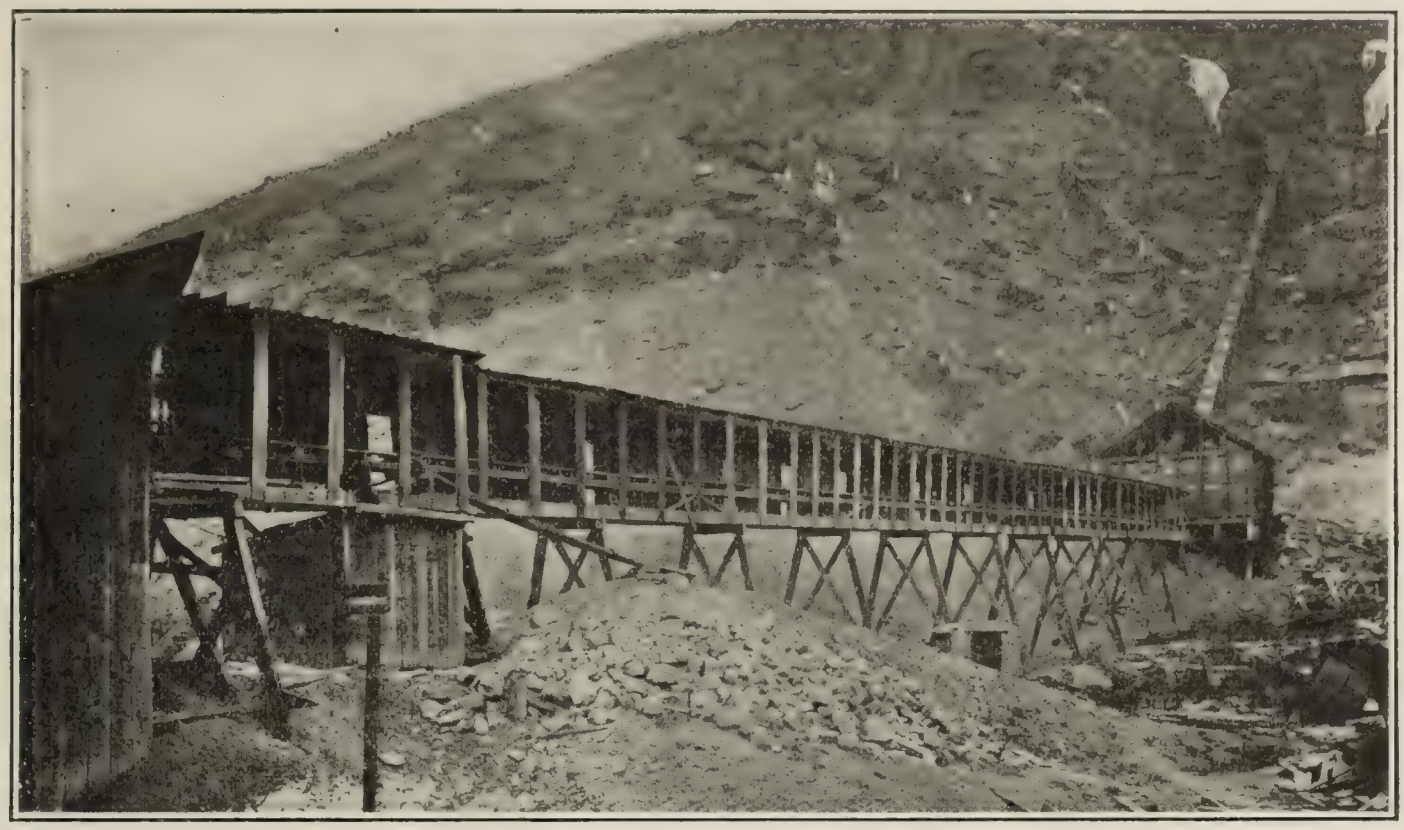
Sander Instrument Co..1148
Sawyer Belting Co.....1179
Scandinavia Belting Co..1122
Schaffer Eng. & Eq. Co.1177
Schofield-Burkett Cons..1180
Schultz & Son, A. L....1155
Shawmut Pav. Bk. Co..P- 6
Sheetz, H. V., Trustee..1161
Smith Co., Claude.....1113
Smith, W. W.....1180
Soisson Fire Bk. Co....P- 3
Southern Fire B. & C. Co.P- 3
Standard Dry Kiln Co..1167
Stark Brick Co.....P- 8
Sterling Brick Co.....P- 4
Stupakoff Laboratories..1149

Taylor Instrument.....1153
Terre Haute Vit. Bk. Co.P- 4
Thew Auto. Shovel Co.1177
Thwing Instrument Co..1160
Toronto Fdry. & Mach.1157
Trautwein Dryer & Engineering Co. 1113

United Brick Co.....P- 5

Webb Wire Works.....1153
Weller Mfg. Co.....1112
Westinghouse El. & Mfg.1121
Woodhouse Chain Wks.1154

Zook, G. W.....1153



HOW the owners feel about this belt, carrying shale, they have expressed in a recent letter as follows:

"We are very much pleased with the conveyor belt 475 ft. by 15 inches purchased from you about one year ago, as there was practically no stretch to it this first year, in fact we used it over three months before we had to cut it to tighten it up, which we think was remarkable."

The name "MAIN BELTING COMPANY" on belting has for thirty-two years in Clay Plants spelled Reliability, Efficiency and Economy.

MAIN BELTING COMPANY

Manufacturers and Engineers

Philadelphia — New York — Chicago
Pittsburgh — Seattle — Birmingham

Main Belting Co., of Canada, Ltd.
Montreal — Toronto

YOU BELIEVE IN CO-OPERATION?

YOU BELIEVE in helping yourself by helping others—why not help yourself by **helping us?** We want to publish a better paper than we have ever published—the best paper that clayworkers have ever seen.

You can help us to do this, because **we need your ideas**—your viewpoint. We want to know what you think is best for your particular branch of the clayworking industry and for your own particular plant. Your advice will help us and make us better able to earn and keep your confidence.

Remember—your helping us, just now, is like planting seed in your own ground. You have a fixed subscription price—the better "Brick and Clay Record" is, **the more you get for your money. The Heavier Your Investment of Helpfulness, the Heavier Your Dividend of Service.**

It Won't be Very Much Trouble to

¶ Read this page carefully, and, when you have caught its import, be one of those who are willing to give a moment's thought and

Advise a fellow who Needs Advising!

¶ Tell us—please

Which of the features now being published in "Brick and Clay Record" have most value and interest to you?

¶ Put down numerals, 1, 2, 3, 4, 5, and so on, to indicate which you think is most important—that will be number 1—and the next in importance will be number 2, and so on, down to number 12—that will be the one you think least of.

¶ These features are

The Editor's Corner

News Articles and News Features

Feature Articles

Selling Articles

Articles of General Interest

Technical Articles

Questions and Answers

The Letter Box

The Superintendent

Machinery and Equipment

Freight Tariffs

Semi-Monthly Trade Review

¶ This covers, pretty well, what we are doing at the present time, but we, with you, are looking to the future.

¶ Tell us—please

What phase of your business you think we are neglecting?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

What sort of articles do you think we should publish, in order to make the magazine more interesing to you?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

What errors of judgment—of policy—of direct statement—have you noticed in our pages during the past year? This refers to the advertising pages as well as to those devoted to editorial matters.

. . . . . .

. . . . . .

. . . . . .

. . . . . .

¶ You might write us a letter, if you have a good deal to say right there.

¶ And tell us—please

Do you read the advertisements carefully and critically?

. . . . . .

Please think about this—it isn't right, in a mutual proposition, to let the other fellow do all of the work.

Nor is it right to criticize him to others unless you are willing to tell him his faults right to his face.

Have you one great hobby that you would like to see us take up, and develop?

Tear Out This Whole Page and Mail It

To Brick and Clay Record, 445 Plymouth Court, Chicago

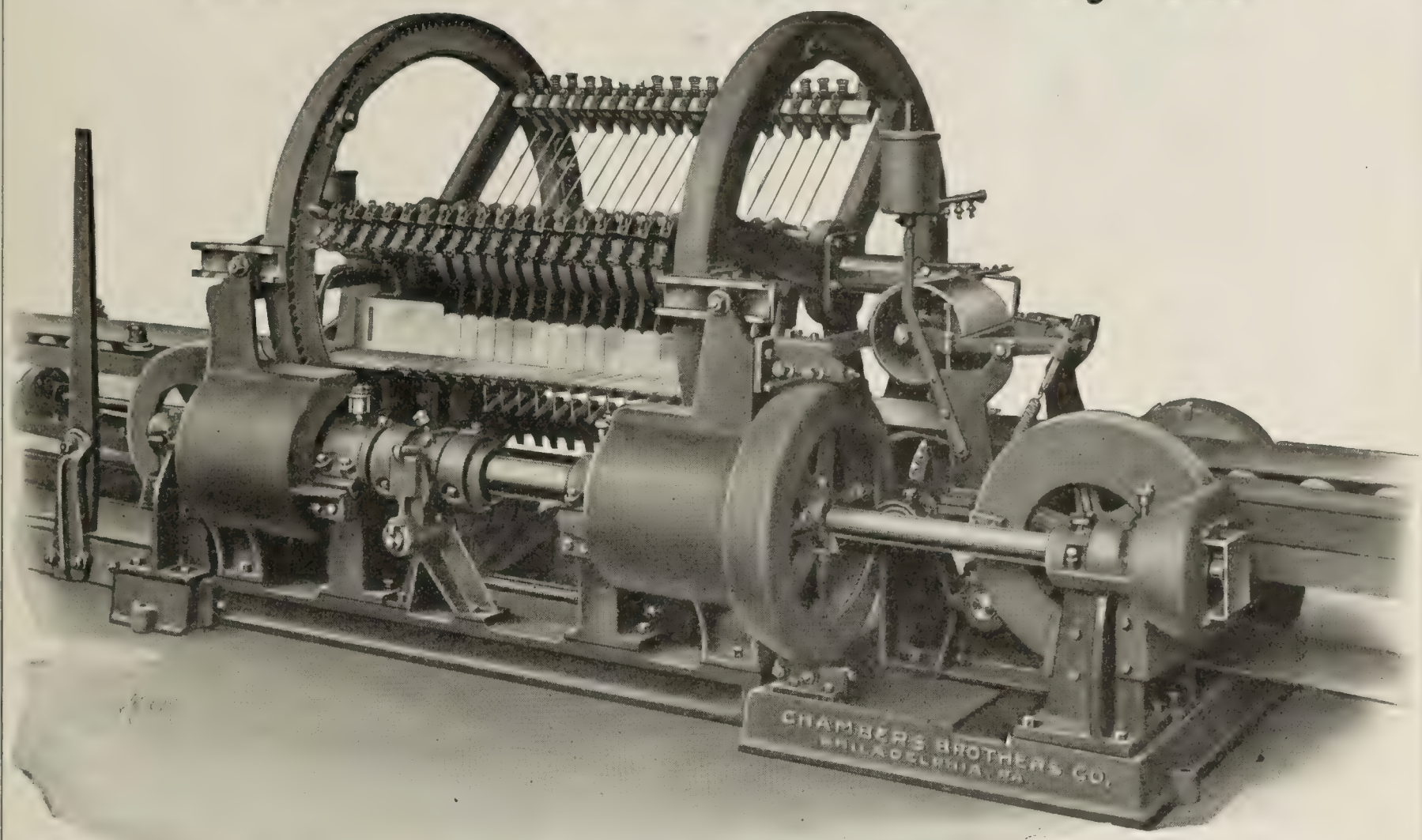
Name _____

Address _____

(We will not use your name)

New Multiple Brick Cutter

That Does Not Swell the Clay Bar



Automatic Side Cutter No. 10, Built by

Chambers Brothers Co., Philadelphia, Pa.

A frictional driven Cutter for Brick or Block that starts promptly and stops at completion of its stroke without noise or shock.

Entirely free from knocker clutches or similar throw out devices.

Driven through an enclosed cone friction of ample diameter and so arranged that the slight lateral movement employed to disengage the friction members upon completion of a cutting strike applies a brake to the entire periphery of the floating member. The result is highly satisfactory.

All revolving parts of the cutting mechanism, together with the platen, are suspended from a stationary steel shaft, the reel hub being upon roller bearings. There is no running machinery beneath the platen, no track or wheels for the support of a carriage, and no parts into which chips can be thrown by the cutting wires. Pressure by one finger will move the cutter endways in either direction.

Observe the enclosure of all gears, not only for their protection, but as safe-guarding against accidents.

Speed-regulating features meet the requirements of machine output and of tender clays. Adjustments to meet various conditions are made without stopping the machine, and are absolutely within control. The underside of clay bar is lubricated by a new method, using only so much lubricant as is required. No slop and no needless waste. A strong, durable, well-built Cutter.



No. 14 Sirocco Multi-Blade Waste Heat Fan operating in the plant of the Ashland Fire Brick Co., Ashland, Ky.



Brick Kilns at the plant of the Ashland Fire Brick Co., from which the Sirocco Fan draws the waste heat for drying fire brick.

Sirocco

TRADE MARK.

Waste Heat Fan System for Brick Plants

Economy of Operation

"Sirocco" Fans have cut down the manufacturing cost of brick for scores of brick and clay plants.

"Sirocco" saves money on brick drying *because* the Sirocco design is *right*—handles enormous volumes of air compared to the power costs.

Built strong to hold up under strenuous working conditions.

Any fan will handle some air—but "Sirocco" handles the most at the least expense. Further than the efficiency of the "Sirocco" Fan our Engineering Department will thoroughly investigate your drying problem and advise the *size and arrangement best suited to your individual needs.*

Reliability of Service

It is one thing to buy a fan, but it is another thing to buy a fan which will withstand the *every-day* working strains and *still be efficient.* That is the character which has sold and kept sold "Sirocco" Fans.

"Sirocco" Fans are built for *service—long service* and to give *good service* and they're *doing it.*

Your product must be properly dried before it goes into the burning kilns and to do this you not only need *heat* in the dryer but heat properly mixed with outside air and a ventilation which will preserve the texture of your brick.

Our Brick Engineering Department will lay out a "Sirocco" System for you and give you all details regarding it. Send us a sketch indicating the location of the burning kilns and buildings, we'll do the rest.

AMERICAN BLOWER COMPANY

DETROIT, MICHIGAN, U.S.A.

BRANCH OFFICES

New York, 141 Broadway
Rochester, Insurance Bldg.
Philadelphia, 605 Hale Bldg.
Pittsburgh, Empire Bldg.
Chicago, Marquette Bldg.
St. Louis, Title Guaranty Bldg.
Atlanta, Empire Bldg.
Kansas City, R. A. Long Bldg.
Seattle, 538 Central Bldg.
San Francisco, Cal., 667 Mission St.
Dallas, Texas, South Western Life Ins. Bldg.
Los Angeles, Central Bldg.
Montreal, Que., Can., 301 McGill Bldg.
Indianapolis, 1462 Lempke Annex
Boston, Mass., 120 Milk St.

Semi Annual Index

Vol. XLVI. Brick and Clay Record January—June 1915.

A

Absorption Tests on Face-brick..... 675
Adel (Ia.) Clay Products Company Holds Demonstration of Burned Clay Construction for Contractors and Farmers 463
Advertising Clubs of the World Hold Convention in Chicago..... 860
Allison, R. W., Portrait..... 654
Ambursen Company, New York, N. Y.583-783
American Ceramic Society:
Seventeenth Annual Meeting.168-258-451
American Clay Machinery Company, Bucyrus, Ohio.....63-469-684-783
American Process Company, New York, N. Y.....1057
American Tilemakers Excel Foreign Producers 561
Anderson Foundry and Machine Works, Anderson, Ind..... 363
Arbogust, C. O.:
Boiler Room Economy..... 48
Arequipa Pottery, The..... 28
Atlas Car & Manufacturing Company, Cleveland, Ohio..... 363

B

Baird Machine & Manufacturing Company, Detroit, Mich..... 68
Baldwin Locomotive Works, Philadelphia, Pa.....1055
Ball Engine Company, Erie, Pa.....363-471
Barnes-Crosby Company, Chicago, Ill.. 972
Barrett Manufacturing Company, New York, N. Y.....1055
Beals, Allen E.:
"Jersey's Historic Pottery"..... 663
Belts:
How to Splice..... 359
Information On 170
Length of in a Roll..... 58
Tight 965
Big Creek Colliery Company, Chicago, Ill.1056
Binns, Charles F., portrait..... 441
Blair, W. P., portrait..... 439
Bleininger, A. V., portrait..... 436
Bloomfield, C. A., portrait..... 446
Boiler Furnace Facts..... 866
Boiler Room Economy, by C. O. Arbogust 48
Bonner, Charles, portrait..... 346
Bonnot Company, Canton, Ohio..... 972
Brick:
Dry-Pressed Heads Discolored..1049-1143
Mill Building Costs..... 964
New Installations of Show Rooms in Chicago 758
Tanks Withstand Great Conflagration at Minneapolis, Minn..... 54
Using for Terraced Approaches, by Charles Alma Byers..... 37
Wants to Make Colored..... 580
Brick Advertising Contest in Decatur, Ill. 948
"Brick and Clay Record" Educational Charts at N. B. M. A. Convention, Detroit 565-671-768
Brick and Tile in House Designing.....1037
Brick Garages, by Chas. A. Byers..... 862
Brick Houses, Permancy and Beauty in 705
Brickmaker Accepts High Office..... 36
Brickmakers Protest Unfair Competition 162
Brickmaker, When He Builds, by C. A. Byers 1138
Brick Paving Recommended by Engineering Chief.....1048
Brick Roads:
Better Type for Illinois, by Charles D. Stillwell 43
Illinois to Have Larger Mileage..... 72
One of the First State-Aid Roads Built in Illinois..... 354
Radiating from Dayton..... 165
Brick—the Scapegoat of the Edison Fire 336
Brick, Tile and Terra Cotta at the Panama-Pacific Exposition.....1136
Brickwork, A Table to Figure.....1051
Brickwork in Midway Gardens, Chicago. 940
Briggs, Finney, poem, "Straight from the Shoulder.....1032
British Clayworkers Bidding for World's Trade 704
Broderick and Bascom Rope Company.. 261-471-971
Brown Instrument Company, Philadelphia, Pa.....174-681
Build Now and Save..... 764
"Build Now" Movement in Chicago..... 379
Building Brick Promotion, by William B. Wreford 453
Building Construction.....Data 467
Bullnoses, How to Make by Hand..... 357
Bureau of Standards Conducts Experiments on American Materials.... 354
Burned Clay As An Imperishable Interior Decoration, by J. H. Longfellow 348
Burned Clay Fountain in Pittsburgh Department Store 169
Burned Clay vs. Galvanized Culvert Pipe 963
Burned Clay vs. Lumber, by Gardner Read and E. Winfield Day.563-665-765
Burner as a Bricklayer.....1051
Burning:
Cannot Raise Heat..... 963
Black Flashed Brick 1130
Burning a Continuous Kiln..... 947
Dry-Press Brick 474
Economy of Reburning Soft Brick.. 864
Some Questions Answered..... 773
Wants to Change System..... 962
Buying Face Brick, by Louine Worden 945-1039-1132
Byers, Charles Alma:
Brick Garages 862
Using Brick for Terraced Approaches 37
When the Brickmaker Builds.....1138
Where Brick and Tile Enhance Interiors 762

C

Camp, Henry H., portrait..... 654
Canada's Fire Losses..... 660
Canadian and International Good Roads Association:
Holds Annual Meeting..... 240
Canadian National Clay Products Association:
Annual Meeting 153-346
Secretary Walsh Resigns..... 169
Canton Grate Company, Canton, Ohio..1057
Carpenter, W., portrait..... 443
Casson, Herbert N.:
Portrait 40
What is the Matter with the United States 40
Cathey, G. V., portrait..... 442
Cement:
Joints in Clay Sewer Pipes..... 962
Reduced Production of..... 161
Ceramic Engineering 1038
Ceramics, Industrial Course at Illinois University 35-347
Ceramic Supply and Construction Company, Columbus, Ohio..... 871
Chain, the care of..... 964
Chambers Brothers Company, Philadelphia, Pa. 874
Chase Foundry & Manufacturing Company, Columbus, Ohio..... 872
Chicago Adds Twenty Miles to Her Fire Limits 650
Chicago Manufacturing & Distributing Company, Chicago, Ill..... 363
Chimneys, Relative Efficiency Compared to Fans 358
Clay:
Burning of Alkaline..... 56
Remove Obstacles to Use of Domestic 70
Clay Bar "Feathers"..... 414
Clay Block Snow Fence..... 953
Clay Products at San Francisco Exposition 1041
Clay Products in Canada, by J. Keele.. 661-769
Clay Storage, by H. P. Robbins..... 52
Clippert, George H.:
Elected Third Vice-President N. B. M. A. 435
Portrait 435-855
Clippert, William, portrait..... 438
Cling-Surface Company 685
Coal:
Buying on a Heat-Unit Basis..... 677
Cost for Steam Power..... 776
Directions for Firing Bituminous... 358
Economy of Various Grades..... 55
Home-Made Unloader 1042
Making Consumption Correspond to Output 1052
Cobalt-Uranium Colors, by Barney S. Radcliffe, A. B..... 779
Coloring Matter in Molding Sand..... 864
Coloring Matter Used in Clayworking.... 674
Cones vs. Pyrometers..... 865
Concrete, Fight Against Use in Cotton Warehouses 350
Consolidated Tramway Company, New York, N. Y..... 63
Conversion Factors 176
Conveyor Capacities and Required Horsepower 255
Conveyor Construction 866
Crook, Charles M., portrait..... 448

D

Darling, F. W., portrait..... 654
Day, E. Winfield:
"Burned Clay vs. Lumber"..563-665-765
Portrait 155
Saving Dollars by Using Brick..... 154
Dayton—Pivot for Permanent Road Projects, by Victor C. Smith..... 165
Deckman, Charles J.:
Elected First V. P., N. B. M. A.... 435
Portrait 344-435
Denison, C. W., portrait..... 654
Detonating Device, by Harrison Souder. 958
Dies, the Proper Construction of for Hollow Ware, by Ernest W. Knapp 457
Comment on 776
Dodge Manufacturing Company, Mishawaka, Ind. 262
Downey, M. H.:
Street Paving Economy..... 848
Drain Tile:
Breaking Strength of..... 267
Desires to Cure Blisters on.....56-266
Dryer Capacity 54-356
Drying in Foggy Weather..... 55
Dunn, Frank B., portrait..... 439
Du Pont Powder Company, Wilmington, Del. 780

E

Eastern Paving Brick Manufacturers' Association Annual Meeting..... 863
Edison Uses Brick..... 651
Editor's Corner 22-150-236-331-432-554-648-752-846-938-1030-1124
Effect of Bombardment on Concrete.... 559
Eisenhart, R. D., portrait..... 441
Electricity and Efficiency, by J. P. Mallett 1034
Electricity in Brickmaking, by John A. Randolph 756
Erie Pump & Engine Works..... 68
Estes, L. V., Inc., Chicago, Ill..... 968

F

Fan or Blower Capacities..... 358
Fans, Relative Efficiency..... 358
Fate, J. D., Company.....63-871
Fegley, H. Winslow:
An American Kaolin Industry..... 857
How Reading is Solving the Housing Problem 242
Fire-Brick:
Canadian Free List..... 153
Dimensions 773
Lists 69
Number Required for Various Circles 577
Useful Information Concerning..... 577
Fire Insurance Contract, by John J. Thomas 41-163-251
Fireplace Construction 861
Fire, We Have Something to Learn..... 655
First Aid Outfits..... 256
Fitzpatrick, F. W.:
"Meeting Competition" 560
"Five Per Cent" Rate Increase, by Irwin W. Preetorius 31
Flower Pot Possibilities..... 860
Forgan, James B.:
Comments on Business Outlook for 1915 27
Foster, C. E., portrait..... 448
Freese & Company, Galion, Ohio....581-682
Freight Tariffs and Troubles.....61-173-260-362-466-578-680-778-865-967-1054-1145

G

Georgia Brick Manufacturers' Association Formed 944
Gibb Instrument Company..... 683
Glazing:
Gets Blue on Stoneware.....1049-1143
Wants to Know About Using Salt.. 580
Gregory, M. E., portrait..... 443
Grout, A. P.:
The Watchtower of Prosperity.....1126
"Gripwell" Pulley Covering Company, New York, N. Y..... 971
Guy Ropes 359

H

Haggerty, John S., portrait..... 438
Hammond, W. K., portrait..... 448
Hanley, William, portrait..... 445
Hardinge Bros., Inc., Chicago, Ill..... 969
Harris, Charles T.:
Elected Secretary Hollow Building Tile Manufacturers Association.... 160
Portrait 160-653
Harrop, Carl B., E. M.:
Kiln Expansion and Bracing.....566-656
Portrait 566
Heat and Power Equivalents..... 676
Heat Required for Burning Clay Products 57
Hilker, A. W.:
Elected President Wisconsin Clay Manufacturers' Association..... 355
Portrait 355
Hollow Building Tile Manufacturers' Association:
Elects Secretary..... 160
First Annual Meeting..... 247
First Quarterly Meeting at Cleveland 754
Report of Progress..... 653
Hollow Tile Bunkhouses Built by Railroad 771
Homes, F. B., portrait..... 447
How Reading is Solving the Housing Problem, by H. Winslow Fegley.. 242
How to Get Hurt..... 867

I

Illinois Clay Manufacturers' Association: Holds Annual Meeting at Springfield 252-342

Indiana Comes Out of the Mud..... 754
Indiana Paving Brick Manufacturers' Association Formed..... 944
Insurance on Idle Brick Plant..... 173
International Clay Products Bureau Considers Publicity..... 264
Interstate Mantel and Tile Dealers' Association:.
Holds Annual Meeting..... 464
Iowa Clay Products Manufacturers' Association:
Annual Meeting at Ames, Ia..... 39
Meets at Des Moines April 21..... 755
Iowa State Drainage Association Annual Meeting at Webster City..... 670
Ittner, Warren, portrait..... 445

J

Jersey's Historic Pottery, by Allen E. Beals..... 663

K

Kaolin:
Deposits in Wisconsin Create Interest **670**
Domestic Supply Declared Satisfactory..... 707
Plants in Pennsylvania, by H. Winslow Fegley..... 857
Kilns:
Advice on Setting Up-draft..... 579
Best Height for Crown..... 474
Burning Lignite in a Down-draft... 472
Expansion and Bracing, by Carl B. Harrop, E. M.....566-656
Information on Stack Area..... 674
Quantity of Fire-brick for Crowns. 774
Seven Test Kilns, by Ray Thos. Stull, E. M., and Ralph Kent Hursh..... 851
To Calcine Fire Clay..... 864
Wants to Glaze Under Side of Crown 55
Keele, J., article on "Clay Products in Canada".....661-769
Keeler, B. C., portrait..... 654
Klose, K. W..... 67
Knapp, Ernest W.:
The Proper Construction of Hollow Ware Dies..... 457
Knot Information..... 256

L

Letter Box..... 58-171-259-360-575-678-774-867-966-1053-1144
Letter to the Editor.....1125
Lignite, the Burning of in Down-draft Kilns..... **257**
Lincoln Highway, Suggests it be Paved with Brick..... 69
Link-Belt Company, Chicago, Ill.....263-582
"Literary Digest," and other papers republish article on Edison Fire.... 667
Longfellow, J. H.:
Burned Clay as an Imperishable Interior Decoration..... 348
Los Angeles (Cal.) Pressed Brick Company's Exhibit at Panama-California Exposition, San Diego, Cal.... **558**
Lubrication, New Method by Steam..... 468
Luten, A. B., portrait..... 442

M

Maahs, J. A., portrait..... 653
Macdonald, H. H., portrait.....439
Machinery and Equipment..... 62-174-261-363-469-581-681-780-871-1055-1146
Made in U. S. A..... 51
Mallett, J. P.:
Electricity and Efficiency.....1034
Manganese Supplies Curtailed by War... 380
Manufacturers' Equipment Company, Dayton, Ohio..... 65
Marinette Iron Works, Marinette, Wis.. 194
Marion Machine, Foundry & Supply Company, Marion, Ind.....64-175-262
Marion Steam Shovel Company, Marion, Ohio.....683-784-1057
Marsh-Capron Manufacturing Company, Chicago, Ill..... 363
Martin, F. B.:
Elected President Northwestern Clay Association..... 241
Portrait..... 241
Martin Grate Company, Chicago, Ill.470-969
Matz, Herman L., portrait..... 346
Mayer, C. P.:
Elected President N. B. M. A..... 435
Portrait.....344-435
McCannell, J. C., portrait..... 446
Mead, John H., portrait..... 441
Meeting Competition, by F. W. Fitzpatrick..... 560
Mercier, J. A., portrait..... 438
Mine Accident Contains Valuable Lesson 467
Mitchell, Burton J.:
Portrait..... 856
Succeeds Wm. S. Humbert, Inc..... 856
Mitchell, R. C., portrait..... 444
Model Dairy Barn, The..... 33
Molding Sand, The Coloring of..... 56
Motors, Using Two on Same Drive 257-578-677
Motors, Why Some Fail.....1038
Murray Iron Works, Burlington, Ia..... 783

N

National Brick Manufacturers' Association:
Convention at Detroit....238-344-434-556
Convention Echoes..... 586
Convention Souvenirs and the Givers 485
Songs Old and New Sung at the Banquet..... 486
Unconventional Convention Gossip.. 478
Visit to Ford Motor Company's Plant 556
National Builders' Supply Association Convention..... 343
National Building Brick Bureau Formed 855
National Chamber of Commerce Holds Annual Meeting..... 382
National Dry Kiln Company..... 781
National Fire Protection Association Passes Resolutions..... 993
National Paving Brick Manufacturers' Association:
Holds Good Roads Night at Detroit Feb. 16..... 39
Nesch, Robert C., Dies.....1033
New England Builders' Supply Association Holds Annual Meeting....240-464
New Jersey Clayworkers' Association:
Asks Legislature for Research Fund 258
Holds Annual Convention..... 53
New York Building Material Exchange Holds Banquet..... 161
New York State Clayworkers Organize.. 755
Nineteen Fifteen—the Year of Promise. 24
Northwestern Clay Association:
Holds Annual Meeting at Minneapolis 158-241

O

Ochs, A. C., portrait..... 442
Oil, Burning in a Continuous Kiln..... 172
Oregon Clayworkers' Association:
Makes Plans for Publicity..... 785
Organized at Corvallis, Ore..... 464
Orton, Edward, Jr., portrait..... 436

P

Panama-Pacific Clay Products House:
Building the Model Residence..... 168
Distributing Plans of House..... 258
Getting its Second Wind..... 652
Herman Matz Speaks at Detroit.158-346
Starting its Construction..... 40
What Are You Going to Do About It?..... 570
Pan-American Road Congress to be Held in California..... 779
Paving Economy, by N. H. Downey..... 848
Paving Law Amended in Indiana..... 754
Pettigrew Foundry Company, Harvey, Ill. 193
Porcelain, Soft Paste..... **761**
Pottery Exports..... 875
Pottery Notes..... 84-190-280-375-574-702-801-890-987-1075
Preetorius, Irwin W.:
The "Five Per Cent" Rate Increase. 31
Priming Dynamite..... 672
Pulley Information..... 58
Pulley, the "High" Side of..... 676

Q

Questions and Answers.....54-172-257-356-472-579-674-773-864-962-1049-1140

R

Radcliffe, Barney S., A. B.:
Some Cobalt-Uranium Colors 779
Ralph, N. C., portrait..... 469
Randall, T. A.:
Re-elected secretary N. B. M. A.... 435
Portrait.....345-434-855
Randolph, John A., article on "Electricity in Brickmaking"..... 756
Rathfon, W. C.:
Burning Black Flashed Brick.....1130
Reaching the Farmer, by Edwin G. Zorn 49-167-253-352-454-571-668-759
Read, Gardner:
"Burned Clay vs. Lumber"..563-665-765
Portrait..... 154
Saving Dollars by Using Brick..... 154
Reynolds, G. M.:
Comments on Business Outlook for 1915..... 26
Richardson, W. D., portrait..... 436
Ricketson Mineral Paint Works, Milwaukee, Wis..... 68
Ringle, John, portrait..... 248
Robbins, H. P.:
Clay Storage..... 52
Robinson, Max., Dies..... 465
Rodgers, Eben, portrait..... 344
Rookwood Pottery Company, Pittsburgh, Pa..... 169
Rose, J. W., portrait..... 446
Rose, L. G.:
Elected Secy.-Treas. Northwestern Clay Assn. **241**
Portrait..... 241

S

"Safety First" in the Brick Plant..... 956
Salmen, Fritz:
Elected 2nd V. P. of N. B. M. A..... 435
Portrait.....345-434-855
Salvage in Brick Walls..... 462
Sand-Lime Brick, Decreased Production. 772
Saving Dollars by Using Brick, by Gardner Read and E. Winfield Day.... 154
Schaffer Engineering & Equipment Company, Tiffin, Ohio.....105?
Schlake, William E.:
Appointed to the Chicago Board of Education..... **36**
Schlick, W. J.:
Soil Moisture and Its Relation to Crop Production.....1058
Schofield-Burkett Construction Company, Macon, Ga..... 67
Schultz, A. L. and Son, Chicago, Ill..781-970
Science of Cost Finding, by Edward E. Sheasgreen 46-159-249
Shale, Mixing with Surface Clay..... 357
Sheasgreen, Edward E.:
Portrait..... 46
The Science of Cost Finding..46-159-249
Shingles, Wooden Type Prohibited by Salem, Mass..... 655
Sibley, John W.:
Re-elected Treasurer N. B. M. A.... 435
Portrait.....345-434
Silos 1126
Smith, Victor C.:
Dayton—Pivot for Permanent Road Projects..... 165
Society Advocating Fire Elimination:
Adopts Local Chapter Plan..... 603
Society of Vitrified Clay Manufacturers Holds Meeting..... 240
Soil Moisture and Crop Production, by W. J. Schlick.....1058
Souder, Harrison:
A New Detonating Device..... 958
Southern Pacific Company Builds Hollow Tile Bunk Houses..... 771
Southern Paving Brick Manufacturers' Association Formed.....1033
Specialty Wire Company..... 685
Spencer, Ralph portrait..... 447
Stack Sizes for Steam Boilers..... 170
Standard Dry Kiln Company, Indianapolis, Ind..... 686
Steam Pipes, to Prevent Leaks in..... 965
Steam Shovels in Shallow Work..... 774
Stevenson Company, Wellsville, Ohio.784-871
Stillwell, Charles D.:
Better Brick Roads for Illinois..... 43
Stoddard, Ralph P., portrait..... 444
Store Room, Cleaning Up..... 57
"Straight from the Shoulder," by Finney Briggs 1032
Stull, Ray Thos. and Ralph Kent Hursh:
Seven Test Kilns..... 851
Stull, R. T., portrait..... 443
Superintendent, The.....57-170-255-358-467-577-676-776-866-964-1051-1142

T

Taylor Instrument Companies, Rochester, N. Y..... 873
Teaching Contractors More About Burned Clay..... 463
Tempering Clay, Device for..... 255
Terra-Cotta, Directions for Laying..... 468
Texas Has New Lien Law..... 755
Thermometer, Method of Changing Readings..... 57
Thew Automatic Shovel Company, Lorain, Ohio..... 968
Thomas, John J.:
Portrait..... 41
The Fire Insurance Contract..41-163-251
Tile, Obtaining Better Work.....1038
Toronto Foundry & Machine Company, Toronto, Ohio 874-1056
Totten, G. S., portrait..... 447
Trade-Mark, What it Means..... 577
Trade Reviews.....75-178-268-364-476-584-687-786-876-973-1062-1150

V

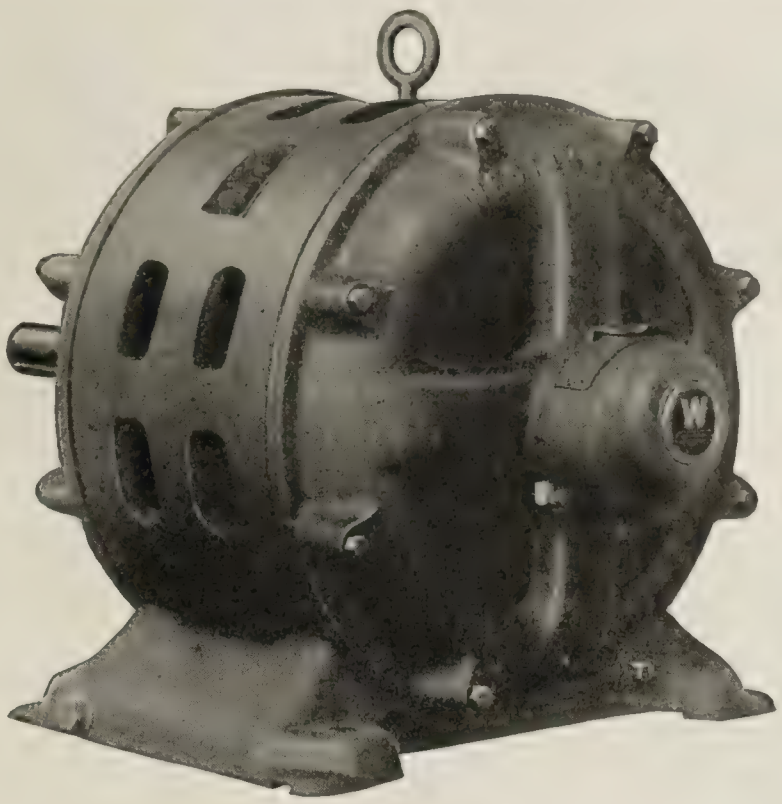
Varney, William P., portrait.....346-855

W

Waite, F. E., portrait..... 444
Walsh, John R.:
Portrait..... 169
Turns Face Toward the West..... 169
Wake of the News.....76-180-269-366-489-589-689-789-878-975-1066-1151
Wartime in Hungary, by Eleod..... 951
Watchtower of Prosperity.....1126
Weidman, Samuel:
Elected Secretary Wisconsin Clay Manufacturers' Association..... 355
Portrait.....248-355
Welding Compound..... 58
Western Ontario Clayworkers' Association:
Annual Meeting.....39-152-463
Westinghouse Electric & Manufacturing Company, East Pittsburg, Pa..... 65
What is the Matter with the United States, by Herbert N. Casson..... 40
Where Brick and Tile Enhance Interiors, by Chas. A. Byers..... 762
Wilson, T. A., portrait..... **445**
Wire-Cut-Lug Brick at Good Roads Congress..... 162
Whitacre, R. E., portrait..... 654
Wisconsin Clay Manufacturers' Association:
Holds Annual Meeting.....74-248-355
Woodhouse Chain Works, Trenton, N. J. 968
Worden, E. Louine:
Buying Face Brick.....945-1039
Wreford, Wm. B.:
Portrait..... 434
Real Building Brick Promotion..... 453

Z

Zook, George W., Buffalo, Kan..... 363
Zorn, Edwin G.:
Reaching the Farmer..... 49-167-253-352-454-571-668-759



Why the New Westinghouse Type CS Is the Best Motor for Brick and Clay Working Plants

FORGED STEEL CONSTRUCTION—Frame and feet are of heavy forged open-hearth steel, thus providing great mechanical strength.

LARGE SHAFT—The shaft is unusually large in diameter. It is made of axle steel, which is 25 per cent stronger than the machinery steel generally used for motor shafts.

RUGGED ROTOR—There is nothing about the rotor that can burn out, work loose, or deteriorate under the heat developed in service.

WINDINGS—Moisture-resisting. Can be supplied waterproof if required.

DUSTPROOF BEARINGS—Ample in size; interchangeable. Motors shipped from stock with dustproof bearings.

NO VENTILATING DUCTS—Low operating temperatures are obtained without ventilating ducts. No danger of burn-outs because of clogged passages.

LARGE AIRGAPS—Larger than those of any other motors on the market. No airgap adjusting devices needed or used.

EASILY REPAIRED—The bearings are the only wearing parts and their natural life is several years. When worn out it is cheaper to renew them than rebabbit them, although this can be easily done if desired. Renewals of all other parts can be easily made in case of accidental damage.

COMPLETE LINE—These motors are made in all commercial sizes and speeds for all commercial polyphase circuits and for all constant speed services, belted, geared or direct connected. Send for full information.

Westinghouse Electric & Mfg. Co.

Sales Offices in all Large American Cities **East Pittsburgh, Pa.**

"SCANDINAVIA"
Solid Woven Cotton Belting

Gives Four Times Better Service Than Best Canvas

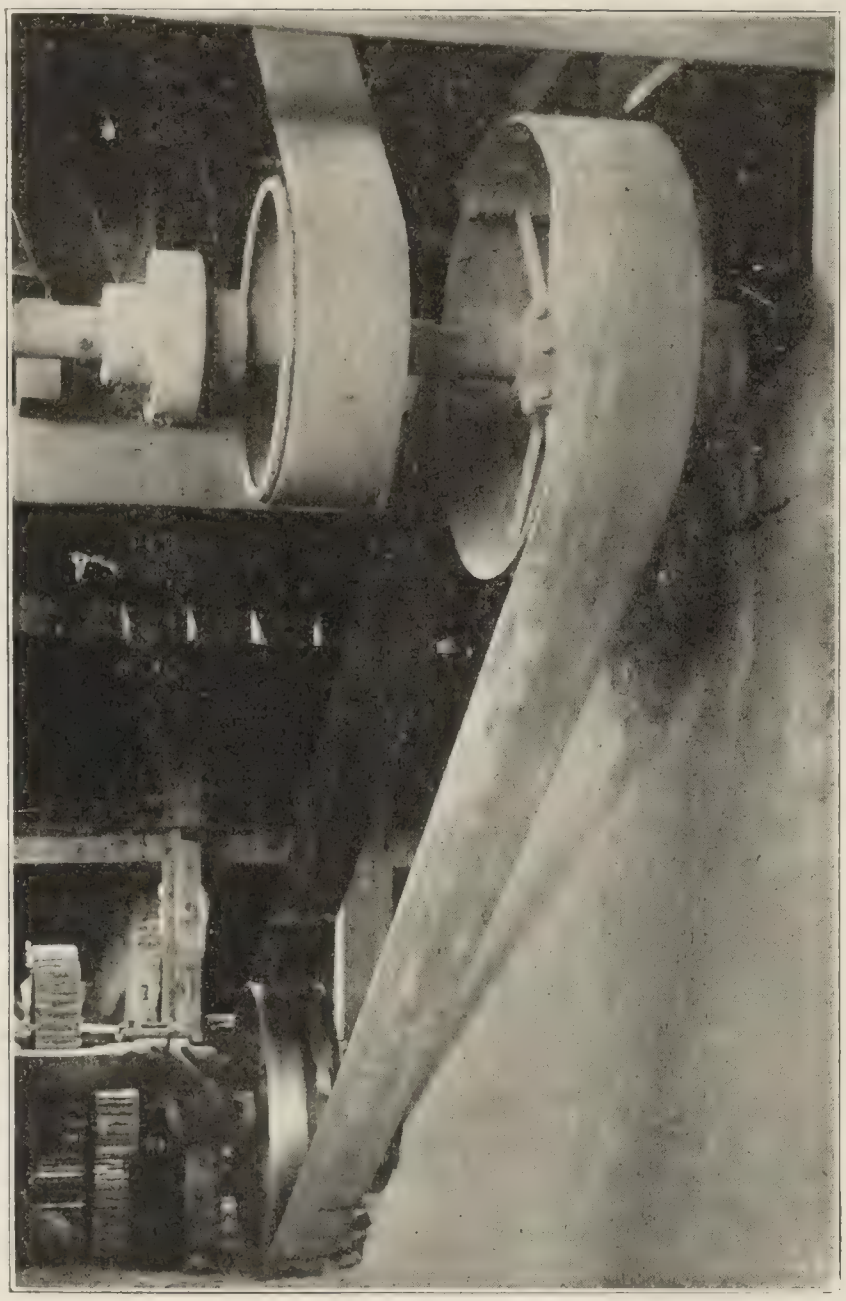


Illustration shows 44 feet of 12-inch extra stout "SCANDINAVIA" used on a brick mill drive in one of the largest brick plants in the south.

"SCANDINAVIA" has been in operation more than **30 months** and still working.

Best grade canvas on same drive gave **but 7 months service.**

Master mechanic states: "'SCANDINAVIA' is giving remarkable service, carrying its load better and lasting four times longer than any other belt used under this condition."

"SCANDINAVIA" is giving equally as good service in a great many other plants. Write our nearest office regarding your conditions.

SCANDINAVIA BELTING COMPANY
106-108 Reade Street, NEW YORK

Atlanta Boston Buffalo Chicago Cleveland Easton, Pa. Pittsburgh Los Angeles San Francisco Portland, Ore.

CANADA — FEDERAL ENGINEERING CO., LTD. — TORONTO — MONTREAL

BRICK and CLAY RECORD

A Semi-Monthly Record of the World's Progress in Clay-working

Published on the First and Third Tuesdays in Each Month by the

Kenfield-Leach Company

445 Plymouth Court, Chicago

Cable Address Kenleaco, Chicago

Telephone Harrison 951

Chicago, June 15, 1915

Vol. XLVI No. 12

Entered as Second Class Matter January 2, 1911, at the Postoffice at Chicago, Ill. Under the Act of March 3, 1879

Terms of Subscription: One Year, (24 Numbers) U. S. . $2.00 Foreign 3.00

All Subscriptions Begin With the Number Last Issued When Subscription Is Received

Single Copies, 20c

Table of Contents

Brick, Tile and Terra Cotta at the Panama-Pacific Expo 1136

Burning Black Flashed Brick 1130

Buying Face Brick 1132

Letter to the Editor 1125

Watchtower of Prosperity 1126

When the Brickmaker Builds 1138

The Editor's Corner 1124

Freight Tariffs and Troubles 1145

Letter Box 1144

Machinery and Equipment 1146

Questions and Answers 1140

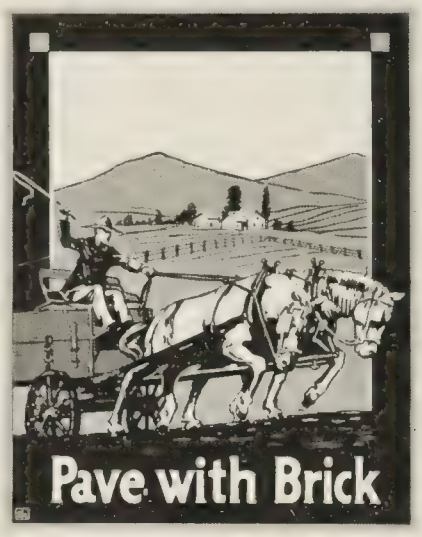
Semi-Monthly Trade Review 1150

The Superintendent 1142

Wake of the News 1151

The Editor's Corner

Comment, Criticism and Advice on Live Issues Affecting Clay Products and on Their Uses, Sale and Manufacture



More than 200,000 colored posterettes gummed and perforated like postage stamps, and printed in color, each bearing the "Build with Brick" slogan, have been distributed by this magazine.

The unkempt "sandwich man", with his lurid sign bearing the warning of a $250,000,000 annual fireloss, and the inevitable lesson of a safer, saner way of building, is well on his way to being as familiar a figure as the "Gold Dust Twins" and the "Little Fairy".

With this issue of "Brick and Clay Record" is introduced an individual who can also be put to work for clay products.

His is a personality less striking, perhaps, than the sandwich man, and he carries no banner to tell of the enormous tax imposed upon him—and upon you—by the mud roads over which he must drive, to bring his produce to market.

But the upraised whip and the straining team —the wheels hub-deep in the ruts of what is by courtesy called a highway—tell a story. The slogan below points the way to better road-building.

You can make this farmer famous. You can so imprint his troubles upon the public mind that every time a man sees a whip upraised, and a straining team on a bad highway, he will not only say: "We ought to have better roads" but say exactly how those roads should be paved.

The posterettes will be in color and they are being printed in generous quantity, so that the price may be low. For the present, at least, they will be sold at $1.50 per thousand.

First come, first served—better put the farmer to work before he gets busy with his harvest.

The Sane Fourth

It is a matter of common knowledge that the number of serious accidents resulting from the use of fireworks and firearms in the celebration of the Fourth of July, took a sudden jump **upward,** in 1914, making the total almost as bad as that of 1911, the year in which the agitation which has almost given us a "Sane Fourth" started. Whether it was the "war talk" that filled the papers then, or something else, no one knows—but if that were the cause, then we have reason to fear the effect of the present amount of war talk, which is, perhaps, three times as much as we heard last year.

Will it result in three times as many deaths from lock-jaw—three times as many fingers blown off—three times as many eyes destroyed?

Much depends upon the fathers of the children. There are, in every community, fat-headed men who believe their children so superior to other folk's children as to be immune to every law of nature. These will be the men who will buy toy-pistols, giant crackers, pin-wheels and rockets for their boys to set off in order that they may grow up to be properly patriotic. And these are the men who will knock at the door of a darkened room, unable to wait until the doctor is ready to say whether the boy will see again—or perhaps live.

What are you going to do with your boys?

A Letter to the Editor

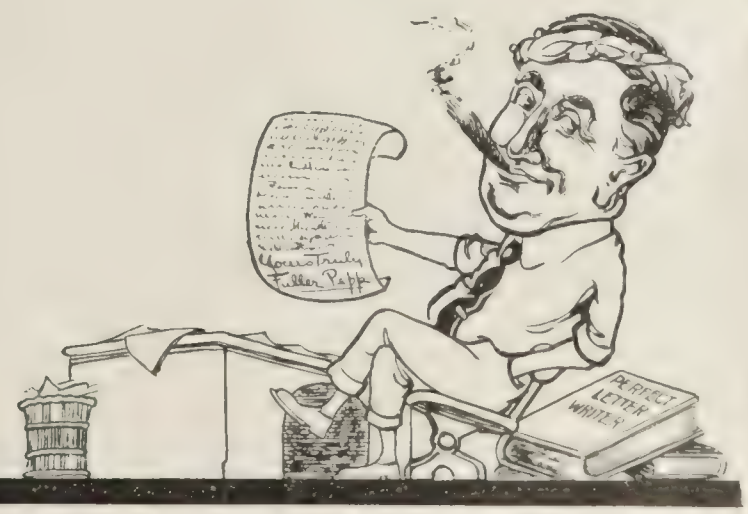
By Finney Briggs



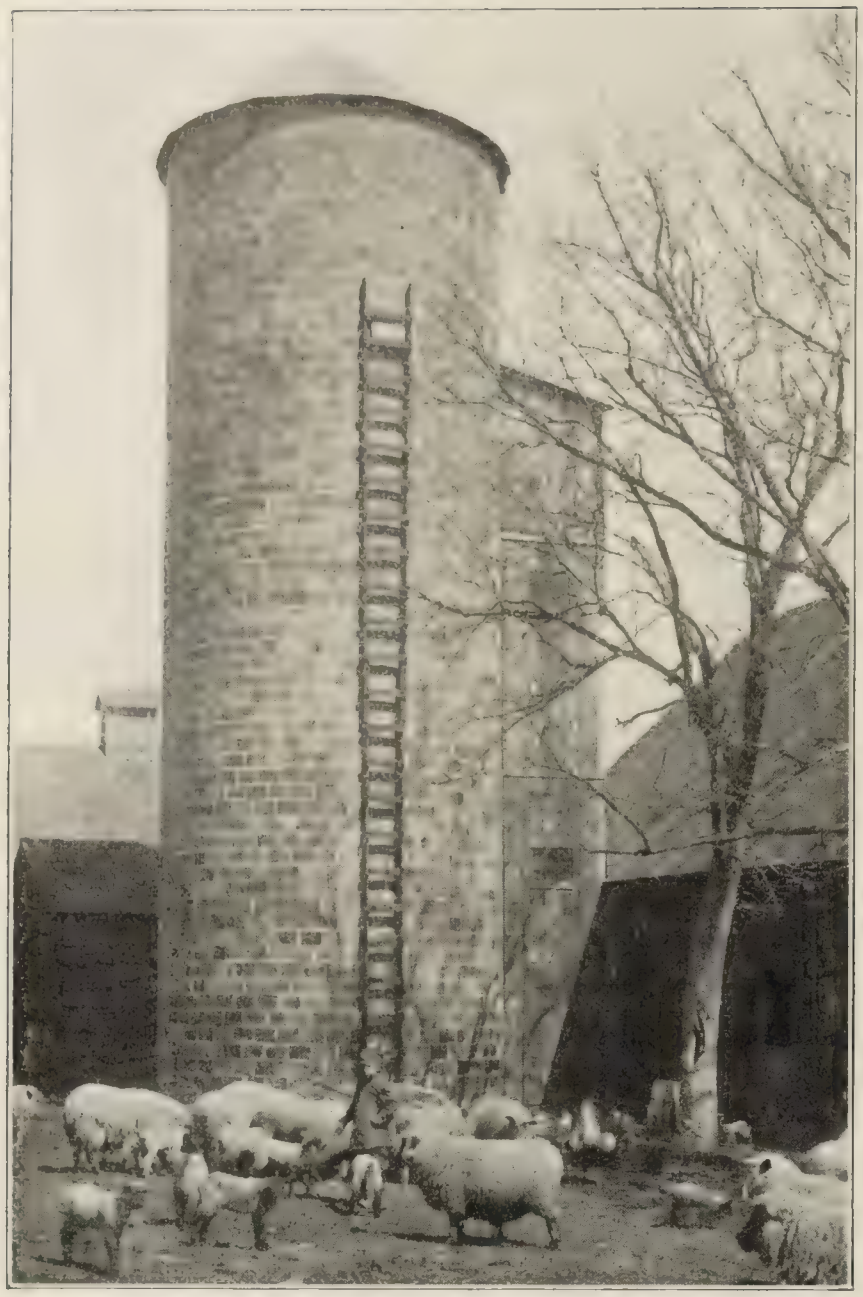
"A lot of fellows
Seem to think it's very hard
To get a 'rep',
But such is not the case
At all, just look at me,"
Said Fuller Pepp. "I won
An everlasting fame
By writing letters—.
My renown quite unsolicited
To me came.
Now kindly take this message down:
'To Editor
Of Brick and Clay:
You've asked us all
To say our say and tell
With counsel wise and sage
Just how we would improve
Each page.
Some of your readers are
Perhaps, as I am,
Rather lonesome chaps.
A woman writer might
Beguile our hardened
Lips to up
And smile.
You might solicit ads
For face-creams, safety-razors,
Fads—that even men who make
And deal in brick have use for
To conceal the lines
Of care and business hurt
That come from digging
In the dirt.
You might, too,
Have a letter-box to hold
The various boosts and knocks,
Questions and Answers would then
Come next to shed light
On a mind perplexed.
I also think
You'd make a hit by brushing
Us all up a bit on tariffs,
High and low—
Freight rates,
Transporting problems, and rebates.
To you, dear sir, as you
Know well, we look
For news—you ought to tell
Us when our friends who delve
In clay are sick
Or well, or go away—
When fortune smiles or
Hides her face,
At any time
In every place.
Once in a while we'd like
To see some graybeard
Scientific'ly
Expound the technique
Of the trade—altho'
I greatly am afraid
Much that he wrote would
Be so far above
Our heads that it would jar
The Cr. E.
If he but knew
His message came to such a few,'

* * * * *

"It seemed right there that
If I took a copy
Of your splendid book
And read it over
I could find some
Other things to call to mind.
But glancing through,
I must confess my helpfulness
Grows less and less.
Most of the features
I have planned are in your pages—
Understand? Next time I write
I'll read you first then
Be prepared—I'll do my worst!
This one letter
Is but a step and I'm
Yours truly
Fuller Pepp."



FINNEY BRIGGS-'15-



A Hollow Clay Tile Silo Forty-two Feet High, at Redfield, Ia. In Addition to Being a Receptacle for Silage, this Structure Supports a Three Hundred and Fifty Barrel Water Tank on Top

The Watchtower of Prosperity

The Silo is Without Doubt a Sign of Progressiveness on the Farm Where It is Found

THE FOLLOWING article was read in the form of a paper before the annual convention of the Illinois Clay Manufacturers' Association, held at Springfield, Ill., February 8 to 10, 1915. It contains some valuable information on the structural requirements of a silo, and also upon the methods to be followed in filling, in order to insure success in the preserving of green fodder. Some light is also thrown on the real permanency and economy of the wooden silo—facts which the manufacturer of tile or brick silos should know.

By A. P. Grout

SILOS have been in use and fully tried and tested in this country for more than a third of a century. The economy and value of the silo has been so thoroughly demonstrated in recent years, and its use so widely extended, that farmers are now more easily convinced of their utility than formerly, and can erect one without having their sanity called in question. The educational and demonstration work which will eventually lead to the general use of the silo, has already largely been done.

The time is coming and not very far distant when the unquestioned economy and absolute necessity for the silo will be forced upon the attention of every progressive farmer in the country. The silo is one of the most valuable innovations in agriculture that have been introduced in recent years. The building of silos, the growing of alfalfa and the feeding of well-bred live stock on the farms, and the return of the manure to the land, will stop the soil deterioration that has been depleting these farms for years, restore them to their former productive capacity, and add immeasurably to the wealth and prosperity of the country.

The foundation of successful farming is soil fertility. All crops are limited by the supply of plant food in the soil. The feeding of the products of the farm to live stock and the retaining of the fertility as far as possible on the farm, is a necessity. This can best be done through the use of the silo.

What is a silo? A silo is in effect any kind of a receptacle, box, barrel, excavation or place in which green fodder may be stored and preserved for months or years until wanted for feed. A silo has been designated as a structure designed for the preservation of food in a green and succulent condition. The name may be applied to a hole dug in the ground or a structure of wood, stone, brick, concrete or any other building material or combination of materials when made to meet certain requirements. Past experience in the use of the silo has developd certain fundamental needs which must be possessed by all silos.

First; the silo must be air-tight. The making of silage is largely a series of fermentation processes. Certain bacteria or germs pass into the silo with the corn or other material, and after a short time, begin to grow and multiply in it. The more air that comes in contact with the silage the further the fermentation will proceed to the detriment of the fodder. If a supply of air is admitted to the silo or remains in it, the bacteria will continue to grow, and spoiled or rotten silage will result. In the process of fermentation, heat is generated, and when it attains a certain degree, usually about 122 to 132 degrees Fahrenheit, the fermenting action is arrested and sweet silage is the result.

Good silage can only be made when air is excluded from the silo. If spoiled or rotten silage is found in a silo of any make, it is because air has reached it in some way.

The silo should be round. In the effort to exclude air from the silo, the round form has been found to be the best, for the reason that the silage can be packed much

more solidly in this than in a square silo.

The silo must be deep. This has been found to be essential. There must be sufficient pressure to pack the fodder and exclude air. The thoroughness with which this is done will determine the quality of the silage in every case.

The silo must have smooth, perpendicular walls. This is necessary in order to allow the mass to settle without forming cavities or air pockets along the walls.

The walls must be rigid and strong. It is obvious that the walls must be sufficiently strong to resist the bursting pressure when the silage settles.

The features enumerated above are essential and requisite to any and every kind of silo in order to successfully preserve fodder in a green and succulent state. Years of practical experience and experiment, however, in making silage, by interested men, have demonstrated that there are other requirements which pertain more particularly to the making of silage, that must be heeded, before the best results can be obtained. There is no silo made that will relieve one of all responsibility or care in the *making* of silage.

To attempt to make silage without a knowledge of what is required and how it is to be done, is a gamble, pure and simple. Corn put into a silo while green and immature **does not** make the best quality of silage or furnish the greatest yield of nutrients per acre. The best quality of silage is made from fairly well matured corn. Dry corn or that comparatively dry will not pack solidly and make good silage without the addition of water. The amount of water necessary for this purpose will vary with the condition of the material and must be determined by the solidity of the packing.

Spoiled or rotten silage around the edges or in any part of the silo is caused by air coming in contact with the silage, and this cannot happen if the walls of the silo are air tight —except through improper filling. The exclusion of the air from every part of the silo is what constitutes proper filling and this is aided by an even distribution of the material and the filling of every part of the silo with sufficient moisture to permit of solid packing. When this has been rightly done there will never be any spoiled silage around the edges, or in any part of the silo.



A Hollow Tile Silo in the Course of Erection on a Farm in in Cerro Gordo County, Ia.

It would seem that the requirements of a silo and the



The Remains of a Wooden Silo After a Wind Storm. During a Single Canvass of Farms in Nebraska in the Summer of 1911 on Which Wooden Silos Had Been Erected, It was Found That Seventeen Out of Thirty-one Farmers Had Their Wooden Silos Blown Down at Least Once, While Many of Them Had Gone Through the Same Experience Twice

directions for making silage are so simple and plain, that "he who runs may read," and yet there have been many unfortunate ventures in silo building and great losses in silage making due to a neglect of even these simple rules.

While most farmers have learned something of the great value of the silo, many have been sadly misinformed and misled regarding the silo as well as the principles and methods of silage making. It is a great misfortune that so much energy and effort has been expended in creating the belief that the only thing of value or in any way necessary, in connection with the silo and silage, is contained within the miraculous structure with mysterious qualities, with its patent roof, doors, and various attachments, which some particular (but not over-particular) silo agent represents.

The amount of misinformation and misrepresentation that has been worked off on the farmers of this country, in connection with silo building, is almost incredible. Many farmers have not yet learned that it is better to go to the man with experience for information and instruction, rather than the man who has something to sell, *and particularly if that man happens to be the agent for a wooden silo.*

In the early days of silo building in this country silos were all made of wood, but in the course of time, as the natural defects of wooden silos became apparent, there was a demand for a more durable and permanent structure, and tile, brick, stone and cement silos have all come into use.

Every one knows that wood, as a container of wet silage, must sooner or later decay. It is also just as incontrovertible that wood will burn, that it will shrink when dry and swell when wet. The wooden silo also has a record for blowing down. The following report of an investigation in a western state is explicit and to the point:

"During the summer of 1911 thirty-one stave silos erected in the vicinity of Lincoln, Neb., were inspected. In the inspection no silo was passed by. They were taken singly, one by one, as found. Here is the result of the inspection:

"Five had blown clear down once before they had been built twelve months; one blew clear down twice before it had been built twelve months; one blew clear down three times before it had been built twelve months; one blew clear down once before it had been built five years; one blew clear down once before it had been built nine years; two blew clear down, but the date of their erection was not ascertained; eight had been re-erected once before they were up twelve months; one had been re-erected twice before it was up twelve months; four were leaking badly; one had been straightened twice; two had very loose hoops; one had broken nearly every hoop more than once; only six were in good condition.



A Forty-foot Hollow Tile Silo at Fonda, Iowa. With a Five-inch Wall, the Silage in this Structure Froze Only Two Inches in Twenty-Below-Zero Weather



Brick "Twins" on the Floodwood Farm, Athens County, Ohio

With such a record as this, it is impossible to classify wood stave silos as permanent structures, and this impossibility rests not, as the wood stave silo men claim, upon failure to observe mechanical principles in the erection of these silos, but upon qualities inherent in the very nature of the material—wood.

Nor can such a state of affairs be charged to the fact that these silos were not properly guyed, because no guying is sufficient to hold such material in place with a proper degree of rigidity. This report reads like a chapter from my own experience.

I built a wood stave silo eight years ago. It blew down while in the process of erection. It was moved by the wind until I had to partially rebuild the foundation. I have had to replace a number of rotten parts and staves with new wood. Several of the iron hoops have

been broken. The silo has already cost me around $150 for repairs and the end is not more than three to five years



A Large Hollow Tile Silo With a Dome Roof in Cerro Gordo County, Iowa

away. It is needless to say that I am an advocate of permanent silos.

From the very nature of things, it is certain that a silo made of wood cannot be durable or permanent. Furthermore, it cannot be questioned that a permanent silo is especially desirable from an economic standpoint. In view of the enormous amount of money that is being expended for silos every year, it is but the part of good business judgment to seek something more lasting and durable than wood.

Within a year I met a man living less than thirty miles from Springfield, Ill., who informed me that he had built a wood stave silo. He further added that in investigating the matter he had made up his mind to build a tile silo, but that an agent for a wooden silo came to him and showed him a bulletin from the experimental station of Storrs, Conn., in which it was plainly stated that silage did not keep well in masonry silos and that wooden stave silos were most satisfactory.

The reason assigned in the bulletin for the poor keeping qualities of tile, brick, cement or stone silos was that these materials take away the heat generated in the silo resulting in the checking of the fermentation, and in spoiled silage around the edges. The conclusions in this bulletin are entirely at a variance with my own experience.

For years I have kept silage in a silo of which the bottom eight or ten feet is made of common brick and unplastered, and in all of these years, I have never found any spoiled silage next to the brick.

About two years ago a wood silo agent came to me with one of the Storrs' bulletins in his pocket and wanted to inspect the silage in a tile silo. It was about the first of May, and my own silo being empty, I took him to a neighbor who had two tile silos, one of which he kept for summer use. The agent got into the silo and did his own investigating. He dug down in a number of places, especially around the edges, he came out with a sample of the silage which he examined carefully, smelled and tasted and finally pronounced perfect. In this case the "proof of the pudding was in the eating." The material for this silage was placed in the silo in September, eight months before. There surely had been ample time for the scientifically explained process of rapid loss of heat generated in the silo to have done its worst and spoiled the silage. Yet this was not the result.

"One swallow does not make a summer" and there is always a chance for error and mistakes in a limited number of experiments. Realizing this fact and not desiring to say anything regarding the above mentioned bulletin that would not stand the test of actual experience, I wrote to the county agent of McHenry County, Illinois, where all types of silos have been in use for many years. I asked what the results of keeping silage in different kinds of silos had been. He replied that tile, brick and cement silos have given excellent results in that county for several years. He also said that the silage keeps just as well in them as it does in wooden silos and in a great many cases better, especially where the wooden silo has been up for several years and the hoops are not perfectly tight.

The county agent of DeKalb county, Ill., states the facts even more pointedly in the following:

"In order that you may have a proper conception of the



A Fifty-foot Tile Silo in Dallas County, Iowa. During the Five Years in Which This Silo Has Been in Use, There Never Has Been a Sign of Spoiled Silage

attitude of the farmers in DeKalb county toward tile, brick, cement and stone silos as compared with wooden silos.

would call your attention to the fact that during the season of 1912 one township in DeKalb county which previously had only three silos, and these of wood, put up twenty-eight silos, all of them being of some material other than wood. The wooden silo has served as a forerunner, but tile, brick, stone and cement are the silos that farmers are building in this part of Illinois in nine cases out of ten. I consider a tile or good hollow wall brick silo the most beautiful, and there surely is none better."

The above testimony comes from men who are disinterested and who have no silos to sell. It comes from farmers who are builders and users of silos, and who have for years watched the development of silos and silage making, for the purpose of determining the best silo and the practice that will give the best results. The conclusions reached by these years of study and observation are shown by what they are doing and the kind of silos they are building. What these practical and experienced men are doing for themselves may be safely followed by others.

At the state dairyman's convention held at Peoria, Ill., during the early part of the year, I took advantage of the opportunity to talk with a number of men who have used silos for years, and without exception they favored the permanent type. I learned of one brick silo that had been used for twenty-eight years and is still in good condition. All over the dairy region of Illinois where silos have been in use the longest, the wooden silo is giving away to permanent structures of tile, brick or concrete and the keeping qualities of these silos are never called in question.

In actual practice there seems to be no foundation for the claim made by Prof. Esten and published in Bulletin No. 70 of the Connecticut Experiment Station.

The fraudulent claim backed by Bulletin No. 70 of the Storrs' Experiment Station has, no doubt, sold many wooden silos where more permanent structures would have been used. It is impossible to protect everyone from fraud and imposition, but the farmers of the country should be led to think for themselves, and investigate the results of those who have had years of experience in the use of silos.

When the farmer has decided upon the kind of silo he will use, there still remain some facts in connection with its erection and use that must not be overlooked. No silo can be permanent without the use of good material in its construction. It should be built upon a solid foundation. It must be reinforced to withstand the great pressure to which it will be subjected. These requirements are applicable to all silos.

After all this has been done and the structure made perfect, the use of the silo and the making of the silage have an important part to perform in securing success. There is no silo made that will produce good silage if improperly filled. This fact has been responsible for many disappointments and failures in silage making. The material used for silage making must be properly matured and it must be put into the silo and packed so as to exclude all air. If the material is too dry to pack thoroughly, water must be used until it will pack solidly. The material must be evenly distributed and tramped, and the outer edge kept the highest, so that in settling, the pressure will be outward and toward the walls of the silo, and not from it, thus keeping the air from getting in around the edges.

The manufacturers of silo material should see to it that the purchaser is thoroughly informed of the part that he is to perform if the structure and process is to be a success.

After having used silos for more than twenty-five years, my own judgment is that, from an economic standpoint, there is no question but that the permanent structure of tile or brick will be the silo of the future.

Burning Black Flashed Brick

In Which the Process of Flashing to Produce Practically Black Brick is Faithfully Described in Detail

By W. C. Rathfon

THE DEMAND FOR FACE-BRICK of rough texture and with dark—almost black—color, is so insistent and hard to satisfy, that the brick with this deep coloring secures a preference, or, in other words, a better selling-price. Since they cost but little more to produce than the lighter and intermediate shades of red, and unquestionably bring a higher price, the profits that come of making them are swift and sure.

There is, however, some difficulty in burning to the desired shade, which, for the sake of symbolism, we will call black —although the color is not a true black, but rather a very deep purple, or very deep blue, or very deep brown, according to the raw material used, the kind of fuel and the method of manufacture.

Most plants, in their attempts to flash to this black shade, find that their draw trials are almost perfect blacks, but, when the kiln is opened, they discover that the brick are back to the natural red color. They assume, therefore, that the clay will not make black brick under commercial conditions—and this is where they are wrong, for almost any red-burning clay can be made to assume the black flash, provided it is given the correct treatment in burning.

THE CHEMISTRY OF FLASHING

The only requirements that a clay should satisfy, in order to burn to a black are:

1. It should naturally burn to a red.
2. It should have a long vitrification range—or rather, it should not have a short vitrification range, which is a distinction with a difference. The range between which the clay assumes a clear ring and is overburned, should be more than 200 degrees, Fahr.

The black coating of a flashed brick, properly burned, is a chemical compound called Ferrous Silicate. The compound will only form at the vitrification temperature of the brick, which is usually about 2,000 degrees Fahr. When this compound is formed, however, it is stable and will not change back very easily to the red. If the brick are flashed at a temperature below their vitrification point, a black coating of Ferrous Oxide is formed, which looks very similar to the former compound—Ferrous Silicate. The latter compound, however, behaves quite differently from the former, for Ferrous Oxide is very easily transformed back to the red color or Ferric Oxide. This is one reason why burners

fail to obtain the black flash on opening the kiln—they flash at too low a temperature.

Even Ferrous Silicate, however, if cooled slowly in a strong oxidizing atmosphere, will turn back to the red color, and, upon breaking open the brick, one will find that it is composed of three layers as shown in the illustration.

The remedy for such a trouble is not in smoking for a longer period, but in preventing the formation of this red skin.

There are two commercial methods for preventing this phenomenon, namely: One method is to cool the kiln after flashing as rapidly as possible, and thus give the clay insufficient time to turn back to red; and the other is to seal all openings of the kiln tight, and to pour in tar or oil from time to time, until the brick are below dark red heat, following this by normal cooling.

DIRECTIONS FOR BURNING THE FLASH

If possible, one should use a free burning coal that burns with a long flame. Any down-draft kiln will do, although one that has a low crown is preferable. The burn is done as usual, until about twelve hours before the usual finishing time. At this point the brick should be nearly completely vitrified, and at this point the fire should be cleaned. If the settle is going faster than one-eighth of an inch per hour, the kiln should be cooled until the rate of settle is just a little more than one-eighth of an inch per hour. Then the damper is lowered as low as possible without cutting all the draft off, which means that the draft should be from 0.03-0.05 inches, or an actual reading of 0.3-0.5 inches.

If inclined grates are used, fire all the coal at the top, and bank it up clear to the arch, so as to shut out all of the air. The kiln under these conditions will soon be full of flame, and black smoke will leak out through the upper cracks and peepholes. Combustion will be so slow that these conditions will usually remain for an hour. After the first charge, break down the fires and recharge in the same manner, leaving no inlet for the air. The idea is to maintain steady reducing condition in the kiln until the burn is complete, without cleaning the fires.

Using flat grates the procedure is the same, except that a heavy charge of coal is thrown in as usual, the fire-doors are shut tight, and the ash-door is closed half way.

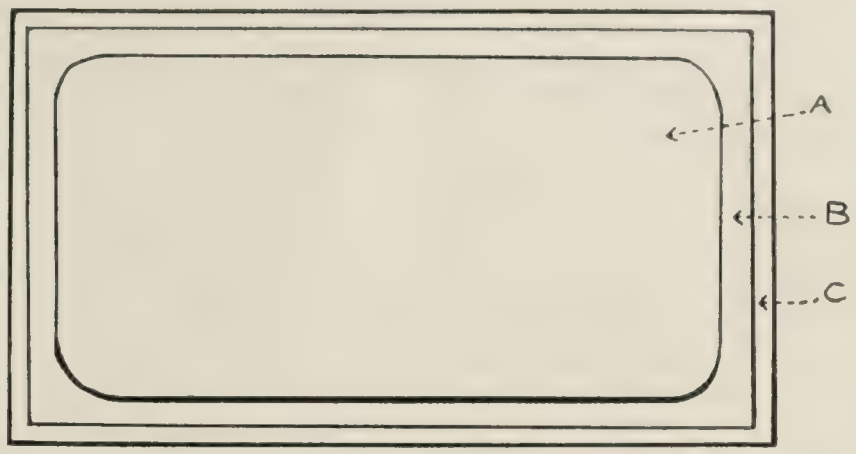
This treatment is maintained for about six hours, during which the kiln should be carefully watched. Trial brick should be drawn every two hours from both top and bottom of the kiln until they all show a dark, smooth black. The settle should be watched closely, and a time settle curve should be drawn for each burn, in order to be able to foretell how soon the settle will be complete. In all cases, the total settle should be as much as the brick will stand without overburning, for the greater the settle the more certain the success of this process. The damper may be raised for a minute in order to see the cones or draw out the trials, but it should be lowered as soon as possible.

At the end of six hours the black flash should have developed and the settle should be at the desired point. In case the settle has not reached this point, the smudging must be continued until it is complete, although less violent, while, if due to starting this reduction too late, the settle is complete before the black flash has been completed, then it will be necessary to cool the kiln by closing the damper completely for a few hours, followed by the reduction treatment or else to use the European cooling treatment described below.

COOLING

The more desirable method of cooling is to cool as rapidly as possible down to below red heat. If connected with a waste heat drier, the fan should be started just a little before the reduction is ended and the top openings and wickets should be opened wide in order to give the brick as little time to return to the red color as possible.

This is another place where burners make their mistake—they do not cool quickly enough. It may be necessary to even enlarge the top openings of the kiln in order to be able to cool the kiln quickly enough. Then the fires may be drawn.



Longitudinal Section of a Brick: (A) Normal Red Ferric Oxide; (B) Black Ferrous Silicate; (C) Red Skin.

The rapid cooling has practically no weakening effect on the brick. If not used in connection with the dryer, the kiln should be cooled by means of the back draft system, for the latter will produce the most uniformly flashed brick.

In case it is found impossible to cool the kiln quickly enough to prevent the outer red skin from forming on the brick, then the European method will be necessary. This method, if carried out correctly, will never fail to produce the black brick. It is done in the following manner: Immediately after the trials are fully flashed, fresh coal is heaped upon the fires, the damper is closed, and the fire-doors and ash-doors sealed and mudded up.

All cracks and openings in the kiln must be daubed up, so as to make it as air tight as possible. A little tar is poured in the top openings about two hours after the last charging and every two hours after that during cooling until the temperature is below red heat. In case the smoke leaks out too fast it may be necessary to pour in the oil more often than every two hours. The kiln may then be opened up and cooling hastened to completion. This method requires from three to eight gallons of tar per thousand brick, but it will produce 100 per cent of black brick, and a better flash can be obtained this way than by the cheaper method.

SUMMARY

In order to burn the black flashed brick, the following points must be observed:

1. The flashing must be done at the vitrification temperature of the brick; 2. The burning during this treatment must be under steady reducing conditions and the reduction must be as violent as possible. The more violent the reduction the darker the flash; 3. The cooling must either be done as fast as possible, or under steady reducing conditions.

The following cautions should be carefully watched: 1. Do not start the reduction before the brick are nearly vitrified, or the kiln will not reach the required temperature under this treatment; 2. Do not start smoking while the rate of settle is very fast. If the settle is increasing rapidly, allow the kiln to cool a little before smoking. Otherwise the temperature of the kiln may shoot up suddenly under the treatment and over burn the brick; 3. Keep the draft very low in order to prevent the temperature from advancing too fast; 4. Do not try to clean the fires during the smoking, for that will only undo the flashing that has been done; 5. If the kiln is being cooled the European way, the tar must be added often enough to give steady reducing conditions; 6. For the latter method, all cracks and openings must be closed tight or it will fail.

Buying Face Brick

In Which a Woman Tells How She Was Transformed from a "Prospect" into a "Signed Order"

By Louine Worden

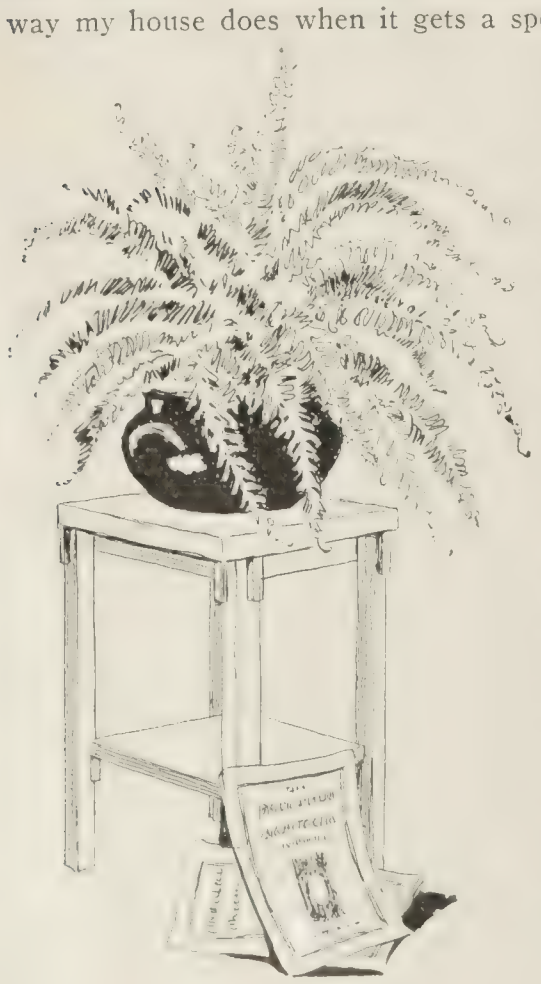
ARTICLES DEALING WITH THE SALE of face-brick are common. In them, the writers show the most effective way of approaching the buyer and of making a quick and profitable sale. Here, for the first time, is the other side of the medal. The writer of this article, in a series of letters to a friend—the wife of a brick manufacturer—tells of the impressions she received, while listening to the "sales talks" of face-brick salesmen.

(Continued from June 1 issue)

I WONDER—are all wizards plump, or are all plump men wizards! I absolutely *know* that beyond saying I would come in to see his samples before I bought my face-brick, I made that second salesman no promise nor did I make any appointment with him. To tell the truth, I probably would have said that much, just to get rid of him. It certainly was a question in my mind, when I first entered his office, whether he was a mind-reader, or simply a very clever young man, for he had every indication of waiting for my coming. That rather pleased me—you know, yourself, that the reason you keep that old dog of yours is because he is so supremely tickled to see you the minute you open your door, even if you haven't been gone more than a half-hour. Now don't laugh. I am not comparing your big, shaggy dog to my nice brick salesman.

Well, anyway, I was surely made welcome, and hoped I would not wear that welcome out before it was time for me to keep my other appointment, which was with the salesman of the other brick-selling company, and his "car" of unknown lineage.

I wish that hubby of yours could have seen the showroom that salesman No. 2 made his habitat. It looked just the way my house does when it gets a special cleaning in honor of some great event. The salesman himself was so immaculate that I felt sure it could not be perfectly natural. Altogether, as you see, I was very much impressed with the whole place. It was, for one thing, so quiet and restful. There were no telephones demanding someone's immediate attention and driving you distracted if not answered right away; no members of the firm dashing in and then hurrying out—they evidently had faith in their employé. Perhaps they did not consider me important enough—but perish the thought. Whatever they may have thought, their plump and smiling young man evidently had a very good opinion of me, and that was enough to please me.



I wanted to tell you about that showroom, but here I am, telling you about the salesman again—so back again to where we started. The showroom—or, I might better say, the showrooms, were in a sort of series, and flower-boxes were on all of the window ledges; an occasional potted boxwood shrub gave the little stiff, formal look we all love near our entrance doors; then lovely, drooping ferns that I did not suppose grew anywhere but in undertakers' windows. But they were there—helping, I suppose, to sell face-brick. The good-looking salesman moved about the rooms, with the well bred air of one who is used to this sort of thing. I simply couldn't get over it.

And the rugs! I know that if I had been fitting out that showroom, I should have been tempted to put Oriental rugs on the floors; first—to show how prosperous the firm was and, second—to be able to point to some panel of brick and then to the rug, following this pantomime with a few well chosen remarks about having tried *and succeeded* in getting as much of the soft, mystic colors into burned clay, as our Turkish friends had in their marvelous weavings.

But who in the world ever was so extravagant as to put a valuable rug out-of-doors? And that brick concern struck the right note when they covered their floors with plain, artistic, dust-colored rugs, with a border design of simple motif and worked out in a slightly darker shade.

Here and there, on some arts-and-crafts stand or table, was a magazine—not, my dear, your well beloved *Good Housekeeping* or *Century*, but architectural stuff with browny covers and great pages printed in soft tones. Nowhere did I see or hear a jarring note, unless it was the feeling that the room was too clean—too good to be true. Each panel of brick had that "just been brushed" look and the windows must have been washed just before I came in, for the sun shone through them much more brightly, I am sure, than it ever shines through mine.

The salesman was an artist. He had studied that exhibit and knew its every point. He would stop our solemn parade at the exact spot where the light made a certain panel look like a big, velvety pad. I know that he would have been supremely disgusted if I had stopped at the wrong place, and evidently I was a co-enthusiast, for I went through his fairyland letter-perfect.

He led me, at last, to a nice, plain, fat "comfy" chair and with all due deference, asked me what particular brick "picture" had struck my fancy. Honest-to-goodness, that man had me hypnotized! He could have sold me the whole showroom or have told me that he thought a house would be

perfect if made up of all the different panels of brick, just like the exhibit, and I would have swallowed it all. Certainly this wizard salesman thought he had me cinched and had visions of filling out an order sheet, and he was nearly right. But the thought came to me of what my architect would say when I told him I had "ditched" the first salesman and bought something without the advice that I was paying for.

I guess that was the anchor that kept me from sailing off into an untried sea under the guidance of a plump young man with white spats. And so it was that I came to earth with a bang—otherwise I feel that I should have been just silly enough to have said I would be perfectly satisfied with anything this brick-selling man suggested.

I have to laugh, now, for really he had not told me a single solitary thing about the brick he was showing me; he had simply taken me through a sort of picture-gallery of well chosen brick, carefully laid up—much more carefully, I am sure, than my contractor would have laid my walls. But the salesman was so sincerely in love with brick, and so much a part of the wonderful collection of colors, that he radiated his own liking and seemed proud that he could offer them to me. Some salesman!

I am sure that, had my architect taken me there in the first place, I should have had the time of my young life selecting the brick, instead of being befuddled—but why go back to unpleasant things? There I sat, half lost in thought, until it came to me that perhaps this young man could clear away some of the cobwebs about prices and *freights* that had so upset me the first day I looked at face-brick.



"But the Salesman Was so Sincerely in Love with Brick and so Much a Part of the Wonderful Collection of Colors, That He Radiated His Own Liking"

To tell the truth, I was a little scared to broach the price question. Did you ever know it to fail that if you went into any kind of a shop that pleased you with its quiet air of luxury and ease that you had a horrible hunch that you were among those who must pay for all of the opulence? I just *knew* that *this* brick concern was terribly high priced, so I dodged around with my questions. Which was best? That was the first question that came to my mind, and, as I thought it, the words came, in a voice that seemed ever so far away. All of the time, *price* was in my mind, and a vision of long trains, loaded with brick for my house, coming from thousands of miles away, each mile adding to the amount that I must pay.

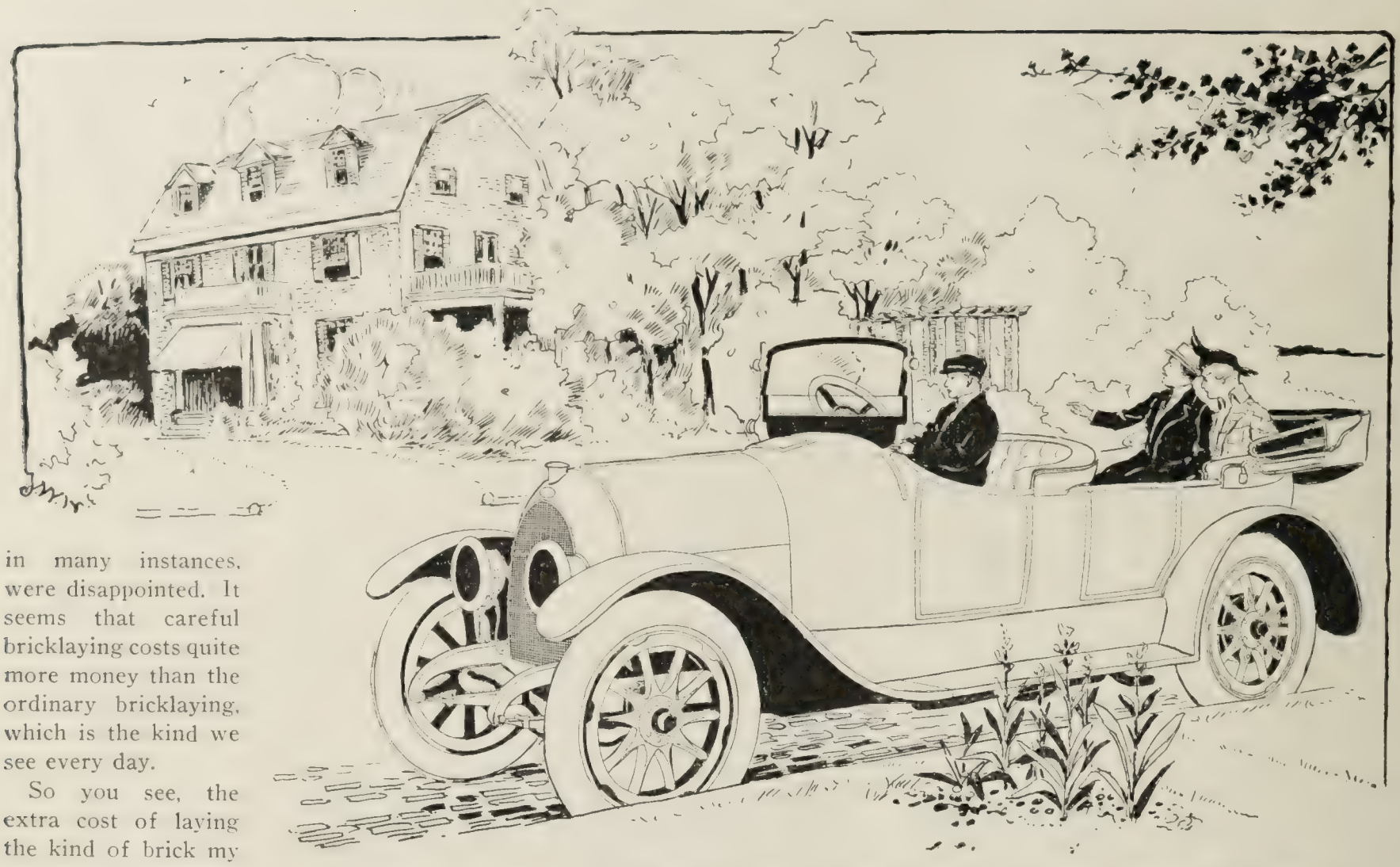
Now, tell me that man was not a villain and me the unsuspecting maiden! Before I knew it, I had told him that the brick, or one of the bricks that I had admired in the other office was not unlike one he had shown me, and that it had been quoted to me at a certain figure. And I also opened my whole heart to him and told him that the brick which my architect preferred was priced at another and lower figure, and that I did not like it because it was *cheap*. Don't say anything—I know now that he was clever and I foolish, but honestly, I can't believe that any woman would have done otherwise.

Within a few minutes, he had somehow managed to center my whole attention on the panel of *his* brick that was so like the brick I had admitted liking. Beside that, he had, somehow or other, impressed me with the idea that in choosing that particular brick, I had shown an insight into the mysteries of brick that was almost uncanny—that out of a hundred kinds, I had picked the *best*.

Of course, his panel of *that* brick looked better than the one I had seen in the other brick office, and so it was fitting that his price, when I asked it, was just a wee bit higher than the price that had been quoted me, and which I, in all foolishness, had divulged. Had he quoted lower, I should have felt that he wasn't living up to his ferns.

Then, once more, the thought of the architect, and his idea of what effect he could get with the lower-priced brick came to mind. Had he of the white spats anything like that? Ah, yes, indeed, and a very excellent brick—when carefully laid. Yes, *indeed,* with careful workmanship, that lower-priced brick would make a very effective wall. You note that word—effective. He did not say beautiful, nor harmonious, nor anything like that—but *effective*. That was just what the architect had said—something about "getting an effect." You know how you hate the word "discreet" and "indiscreet?"

But I shook *that* feeling off—and jumped on "careful bricklaying." Was there such a thing as a degree of carefulness? My dear, I had started something. Mr. Salesman plunged into a long and convincing talk about the merits and demerits of bricklayers—and from what he told me, I began to feel that the good ones were all dead or so rich that they were "mason contractors" now, and too important to handle a trowel. And following that, the fact that the high wages the "unions" demanded made it necessary to hurry the men, so that careful bricklaying was something that few people expected, and they,



"Suddenly he said: 'There is One of the Houses I Wanted You to See' "

in many instances, were disappointed. It seems that careful bricklaying costs quite more money than the ordinary bricklaying, which is the kind we see every day.

So you see, the extra cost of laying the kind of brick my architect had called "cheap" would eat up the difference in price between the very superior brick I wanted (and which, by the way, was the brick that the salesman wanted to sell me), and the low-priced brick that my architect had preferred.

As far as the brick themselves went—each was the very best of its class—thus vindicating my judgment without casting any reflections—not a single shadow—on the judgment of my architect. Yet, in some way, I felt that I had chosen more wisely than the man who had made my plans. Such was the art of the salesman.

Fortunately I wear a wrist-watch. I started to point out something or other, and saw that the time had flown—that the hour of my appointment had arrived, or would arrive in a few moments. I made one leap from that comfortable chair and faced the salesman. He was game; I know he was disappointed, but I want you to know he did not show it. He smiled as sweetly as when I first entered. And just to make him feel somewhat compensated for the time he had spent with me, I promised I would do nothing desperate until I had seen him again.

The other—that is, the first brick office—the one which was the scene of my former visit, was but a few squares away, so I was not more than a minute or two late. I found everything in readiness for the trip, barring a few hurried instructions given the salesman just as he was ready to start out with me. I overheard a "Show her Mrs. Blank's house," and made up my mind that if he did and I knew it, I'd refuse to look.

My doubts as to the correctness of the car banished when we reached the curb. It was long and low and rakish, and looked as though it would go anywhere and climb anything. I was immediately in the best of humor.

How little things change daylight to darkness—sunshine to tears! The salesman opened the door of the car—I stepped inside and stubbed my toe on a hideous box, stuffed full of bricks! Heaven only knows what saved me from pitching out of the opposite side of the car, for I certainly went scooting on all fours! Fortunately, no one saw it, so far as I know, excepting, of course, the salesman, and he didn't dare even smile. What I said—to myself—must be carefully censored. He said something, in the way of an apology, but wisely refrained from saying much, and some of what he did say was blanked out by the banging of the door—a matter he attended to with considerable emphasis, as though relieving his own feelings.

We rode out in silence, until the hurry and bustle of the business district was left behind, and the much-talked of "fine residence district" was near. A few words here and there broke the solemnity of those early minutes, and the pain in my foot grew gradually less.

Suddenly he said: "There is one of the houses I wanted you to see." I looked. "What is that white stuff on some of the brick?" I asked. "That?" he queried. "Oh, that is efflorescence."

(To be continued.)

A Number of Letters Have Been Received

Commenting on the remarkable story "Buying Face Brick," which began in the May 18 issue and which will be concluded in the issue of July 7. One of these, written by Edward K. Cormack, of the Wisconsin Lime and Cement Company of Chicago, appears on the following page. Mr. Cormack was president of the National Builders' Supply Association during the year 1914, and his knowledge of building materials, including face-brick, is enviable. It might be well to read what he says, and then, if you think you can give Miss Worden some assistance in her search for the right brick—

Write Us a Letter That We Will Be Glad to Print

Advice on "Buying Face Brick"

By Edward K. Cormack

MY DEAR LITTLE NEST BUILDER: When I read the account of your attempt to buy brick for the home you have been dreaming and talking about for so long, and your failure to understand the difference in value of brick, it seemed as though I must out of sympathy, come to your rescue with an explanation of this puzzling difference.

In the first place, were you not wrong in starting out, or rather permitting your architect to start out with the thought uppermost in his mind, that only a certain price per thousand was to be allowed for the brick? Did he specify so much for lumber, glass, plaster, etc? You know he did not!

While the Interstate Commerce Commission has ruled that a "brick is a brick," yet there is as much difference between bricks and bricks, as there is between silks and silks, diamonds and diamonds, furniture and furniture, or anything else to which your feminine mind has been accustomed.

Let us briefly consider what it is that makes values or difference in prices. You will be told that it is the demand for a certain commodity, as against the supply of that commodity, which regulates the price. This is only half the truth. Back of it all, what makes the demand? *Is it not the satisfaction the individual derives from the possession of a certain article?*

You are happier and more satisfied dressed in silk than you would be in calico, yet the intrinsic value of the raw material is practically the same, any variance at all being in favor of the cotton, yet you are willing to pay many times the price of the cotton article for the silk: Why? For the increased satisfaction you derive in wearing something pleasing to the eye and mind—the wearing qualities not being taken into consideration at all.

What makes the silk so much more expensive than cotton? Your brick salesman might truthfully say "freight," because the material from which the silk is produced is not found near your domicile. Buyers have to journey abroad to procure it. The terrors of the sea and hardships of railroading all have to be undergone to bring it to your door, everyone of which must be paid for, so logically the difference in price between the silk and cotton *is* one of "freight." Yet at the back of all, *it is one of satisfaction,*—for did you not derive greater satisfaction by its use, you would not create the demand—a demand that encourages the expensive outlay necessary to bring the material to your door.

In nearly all commodities that we purchase, whether it be food, clothing, houses or furniture, it is our personal gratifications that play the most important part when making purchases. Thus it is with the brick. The poorest brick made will outlive yourself, and some of the cheaper bricks which are subjected to the hard usage of a foundry or factory or some building of a similar character, will retain their original appearance longer than will more expensive brick under like conditions.

Nature has not deposited all her treasures in one spot, and while all that man requires for his necessities may be found within a few miles of where he lives, yet as his knowledge is broadened, and wealth increases—the desire for something different from his surroundings is quickened, and he imports—it may only be from the next county, but still it is an importation.

This something costs more, delivered, and it must be different or there would be no reason for the importing of the article.

Now then, what is the difference in brick which leads one to be willing to pay more for one variety than another?

Bricks are generally manufactured from three grades of material:

First: Surface Clay.

Second: Shale, which is either mined in the usual manner, or dug out from the side of a hill.

Third: Fire Clay, which is found under a vein of coal.

The first of these materials burns to a drain-tile or straw colored effect, and has little life or tone, and is seldom adapted to any use but that of common or backing up brick. This material is found everywhere. It is cheaply secured and manufactured, requiring but little heat to be burned into the finished product, yet it was the beginning and inspiration to a better, more lasting and artistic brick.

The second material—shale—burns, as a rule to various shades of red, though some shales will produce browns and blacks with the intermediate shades. Good shale deposits are not plentiful. They are generally found in out-of-the-way places, far from the main line of the railroads, which necessitates expensive railroad connections being made to the plant. The material in its original state is very hard, requires more powerful machinery and a longer period of time to convert it into a condition ready to be set into the kilns than does the common surface clay. It must be burned in more expensively constructed kilns,, and it takes four to eight times as much fuel as the brick that are made of the surface clay. The kilns take longer to heat and longer to cool, *but the result compensates the manufacturer, for when he has finished he has made a brick that has the consistency of granite, the everlasting qualities of the hills from which it was taken, and the color tones that have indeed been taken from nature.*

Then there is a third material—called fire-clay—from which brick are made, and this material calls for the extra expense and hazard of mining—shafts have to be sunk, and a network of underground tracks laid before this material can be brought to light. But every conceivable shade can be made with fire-clay. It can be burned to a marblelike whiteness or an onyx-like black. It will always retain its color, and is thought, by experts, to be the last word in brickmaking. But it takes a higher temperature to burn than shale—which means a more expensive product—yet

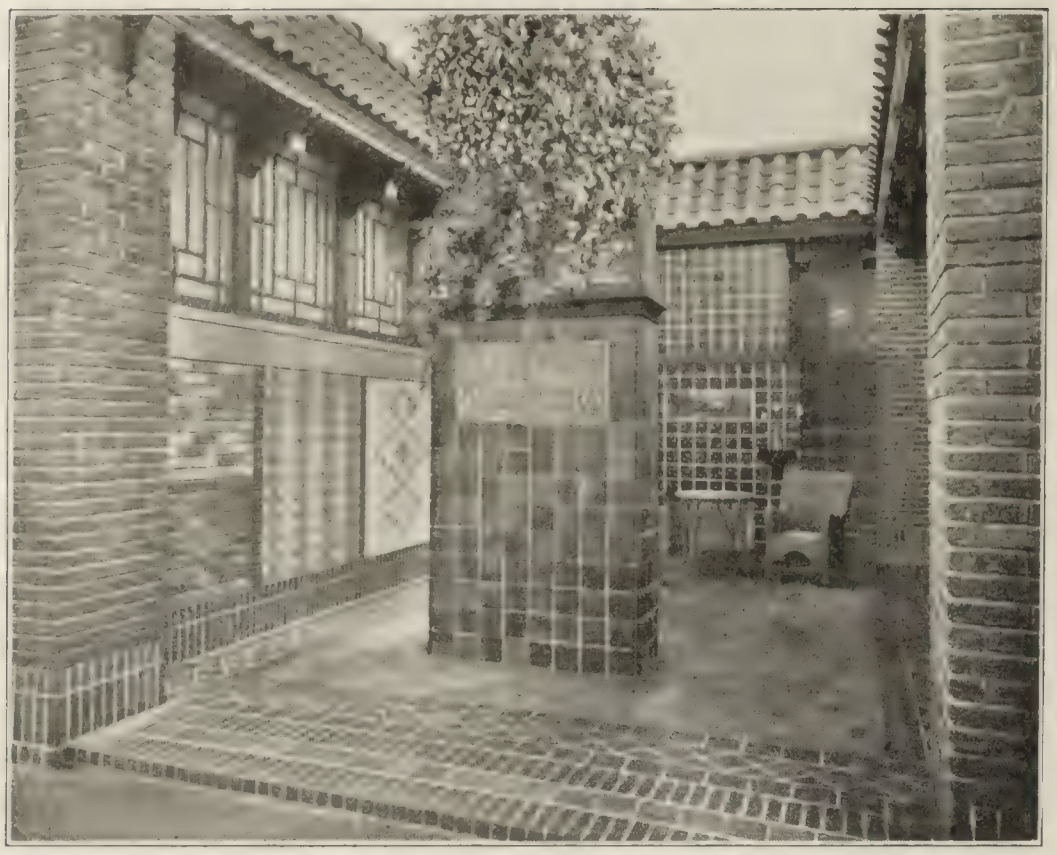
From this fire-clay come those "exclusive shades" that are so much sought after by those who eternally seek the "something different."

The salesman who first attempted to sell you your face-brick might have said all of these things, for he doubtless knew them. He knew that the demand for something different made it necessary to ship brick from far-off localities, *and that the difference in the freight was greater than the difference in actual manufacturing cost—one brick from another—and had a greater effect upon the selling price. from another.* So he told you at least three-quarters of the truth when he said that the difference in price was due to the difference in the freight.

And so, if you wish *your* nest to be as different from that of your neghbors as I know your hat and gown are—you must pay the price the world demands for the extra labor and risk entailed in securing "something different."

Yours for a brick "nest,"

Edward K. Cormack



The Los Angeles Pressed Brick Company's Exhibit

Brick, Tile and the Panama-

Progress in Manufacture Aided by Superior Craftmanship Sets High Mark

CLAY PRODUCTS—particularly those that enter in building construction, occupy an important place in the exhibits at the Panama-Pacific International Exposition at San Francisco. One of the most interesting exhibits, and one that is causing considerable favorable comment, is that of the Los Angeles Pressed Brick Company, in the Varied Industries Building.

Aside from showing the extent and diversified use of brick and tile, particularly from the standpoint of beautification, this exhibit also represents in marked manner, really high class examples of bricklaying and tile setting, and for this reason, if none other, is distinctly an educational feature in arts and crafts.

The exhibit was designed by E. G. Bolles, of San Francisco, who has admirably used his skill as a designer, by creating a display that typifies the dignity and extreme effectiveness of burned clay, and at the same time provides space for a comprehensive exhibit of the many varieties of brick and tile manufactured by the Los Angeles Pressed Brick Company.

Upon entering the exhibit one is at once impressed by the thoroughness and attention to detail. Two well executed pillars of red ruffled brick support a hand-welded and wrought ornamental metal arch and are topped by an artistically wrought pair of lamps. The pillars are laid up in plain bond and the joints are raked. An excellent piece of bricklaying is exemplified by the insertion of a large star in brick in the pillars.

Buff tile, size 6x6, surround a staff near the entrance and forms the background for the insertion of a panel of faience pattern tile, on which is carved the name of the exhibit and the company.

The exhibit is floored with 3x6 buff tile, encircled by a border of 6x6 red quarry tile.

The side walls offer one of the most interesting features of the exhibit, and depict in a striking manner the beauty of brick. On the right wall is shown old-gold pressed brick, buff pressed brick, golden ruffled brick, combinations of cream and gray pressed brick, combinations of medium and light old-gold pressed brick and paving-brick, the whole being surmounted by a running border of red pressed brick in indented fashion. The various examples of laying brick are well executed. The use of herring-bone pattern bond, plain bond, interwoven bond checker board and basket patterns has been carried out on a wide scale. This feature alone is well worth attention, as it is at once evident that the builders have overlooked nothing that might operate to increase information and knowledge on this important subject.

The opposite wall is devoted chiefly to a display of the new rug brick recently brought out by this company. It is shown in about nine shades, and is laid up with the wide joints. Rug brick is the latest product of this company in a rough texture brick, and is one of the most desirable and desired bricks on the market today. The exhibit of this brick plainly shows that any shade or blending of shades absorbs the light and presents a restful and pleasing effect to the eye.

The rug brick panels bear a remarkable similarity to the soft and alluring tones of a Turkish or a Persian rug. Its manufacture is the result of the present-day demand for an artistic rough face brick, showing adaptability for the needs of western territory.

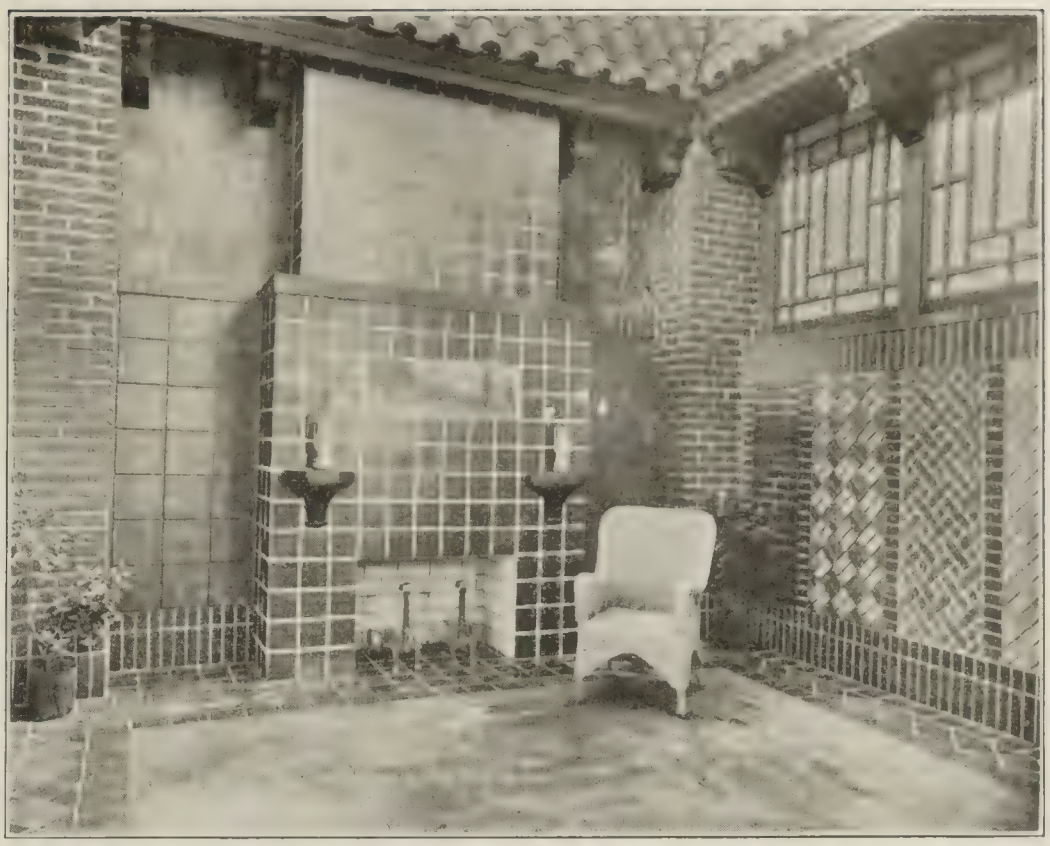
The rug brick panels are one of the most pleasing parts



The National Terra Cotta Society's Pavilion

Terra Cotta at Pacific Expo.

Pacific Coast Clayworkers Lead in Effectiveness of Burned Clay Exhibitions



Another View of the Los Angeles Pressed Brick Company's Booth

of this exhibit, and, although several shades of brick are used, there is not a jarring note in evidence—rather there is a most harmonious blending with the other grades of brick and tile.

Some very fine examples of enamel brick—displaying ivory, white, buff and cream glazes—divide interest with the rug brick.

The walls support three styles of roofing tile made by this company, Mission, Spanish and Italian. The visitor is able to make a nice distinction between the various patterns of tile and the method of laying up same. Needless to say, the work is of the best and merits one's deepest interest.

The crowning touch to the ensemble is given by the handsome tile fireplace at the far end of the room. Over the fireplace there is embodied a tile panel in colors, illustrating most splendidly an old castle sequestered in a beautiful garden spot. This panel shows in vivid style the manner in which this product can be used for purposes of decoration. Hill and dale, trees and shrubbery are represented distinctly and harmoniously. Even the sky and cloud effect is portrayed in true manner. The color work is exceptional. This panel is constructed of what is known as the faience tile. The walls of the fireplace proper are finished in 6x6 green enamel tile, the fire-box in light colored refractory brick, and light and dark green tile has been used on the mantel.

The flanking walls are finished in green mottled tile, surmounted by white mottled tile.

Reed chairs and tables and the use of potted plants add doubly to the interest and comfort of the exhibit. It is open at all times, and it is hoped that visitors will go there and make themselves at home.

The Los Angeles Pressed Brick Company also conducts an exhibit in the Contra Costa County Section in the California State Building, which represents the firm's activities at Richmond, the location of the Northern California plant and the factory of this concern. A third exhibit is installed in the Mines Building.

THE NATIONAL TERRA COTTA SOCIETY EXHIBIT

Another notable exhibit is the pavilion of the National Terra Cotta Society, which has been erected in the Varied Industries Building, and of which an illustration is published on the opposite page. The pavilion is built of gray matt enameled architectural terra-cotta and the floor is of red promenade tile. The roof is of green enameled mission tile. A further description of this very handsome exhibit will be given in a subsequent issue of this magazine.

LOCAL BRICK EXHIBITORS

In the Mines and Metallurgy Building some very interesting exhibits of clay products are found, many of which have been installed by local brick men. The Livermore (Cal.) Fire Brick Company has an exhibit of fire-brick and block that is instructive, as it shows the various uses to which refractory brick is dedicated.

Near it is a very attractive exhibit, made by the United Products Company, of San Francisco. This is made up of common-brick, but so much ingenuity has been used in the display that the graces of fine mortar joints and new textures of face-brick are not missed—rather one wonders that common-brick is content to be, as it were, the servant of its more aristocratic relatives—face-brick and tile.

In the Mines Building, not far from the Missouri state exhibit, is an arch built of tile, some of which is from the United States Encaustic Tile Company. This exhibit is also attracting attention, and it is expected that pictures will be made of it, in the near future, that will do their part in inducing more clay products manufacturers to turn their faces westward this summer, and see what their brothers-in-clay are doing out in the Golden West.

THE BRICK HOUSE BUILT FOR YOU

This house, as announced in previous issues, stands completed. Some weeks since the "Redwood" bungalow was dedicated, the California correspondent of the "American Lumberman" reporting, under date of May 25:

"The dedication of the 'Home of Redwood,' as the redwood bungalow is called at the Panama-Pacific International Exposition, here this afternoon was the culmination of months of effort on the part of the redwood lumber manufacturers of California. The object of this imposing exhibit is to show just how artistic and comfortable a home can be built of redwood when properly treated. In construction of 'The Home of Redwood' the counties of Sonoma, Mendocino and Humboldt, where the redwood timber grows, and which are largely dependent upon the redwood industry, contributed cheerfully and promptly $7,500 toward the total cost of about $24,000."

The difference was made up by redwood manufacturers in other counties, the total number being something like twenty-eight.

Speeches were made by prominent officials, and thousands of visitors passed through the house the first day. It is estimated that not less than 15,000,000 will be shown through and be made conversant with the many virtues of redwood as a building material.



A Brickmaker's Home, in Which Brick and Hollow Tile are Used in Combination

When the Brickmaker Builds

He Sometime Uses His Own Material As is Shown by the Home of a Maker of Clay Products in Los Angeles, Cal.

By Charles Alma Byers

THE HOUSE HERE SHOWN is a particularly interesting illustration of what may be done toward building an attractive home with the combined use of brick and tile. It is the residence of a well known brick manufacturer of Los Angeles, California, and when such a man builds a home for himself, one naturally anticipates something different. At least to create something out of the ordinary was the aim of Joseph Simons when he planned this house, and that he has succeeded is admirably attested to by the accompanying illustration.

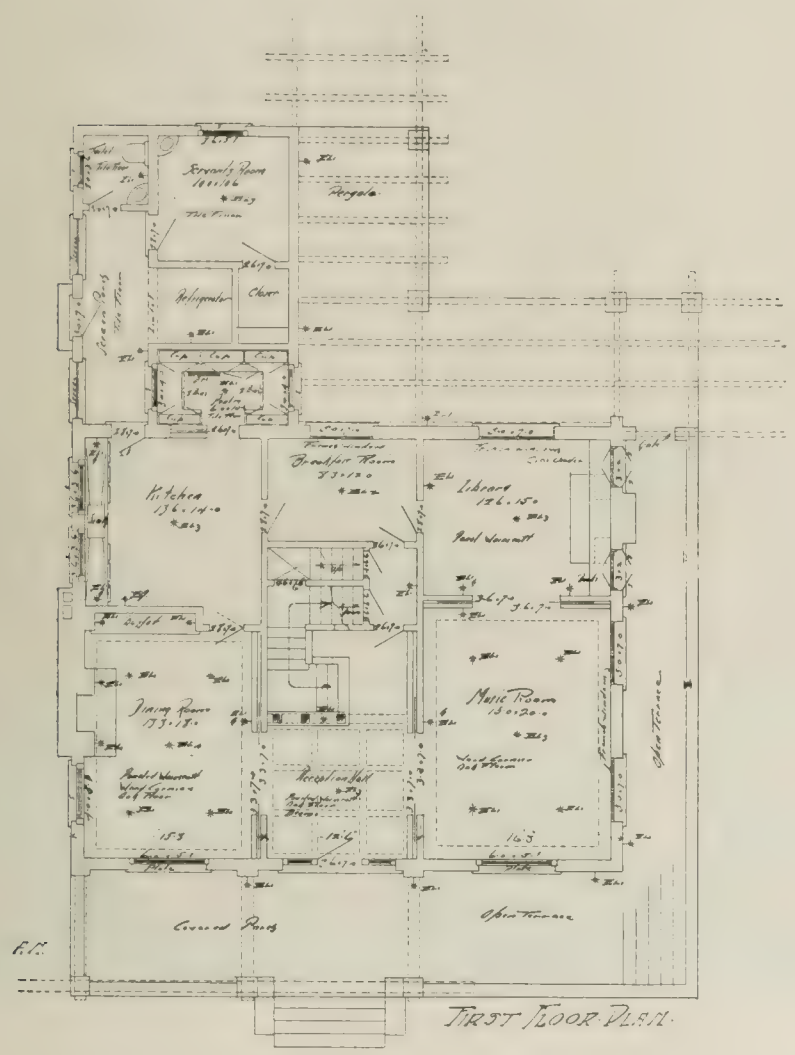
The house is distinctively of the California type, with a general suggestion of the popular bungalow predominating. It is a story and a half in height, and possesses the wide overhangs in the eaves and gables which commonly characterize this type of home. It is of attractive architectural lines, and constitutes a very delightful home from both an exterior and an interior point of view. More than that, it is also of durable construction, and is almost as nearly fireproof as it is possible to make a residence.

As will be observed, the outside walls are constructed of alternating courses of pressed brick and hollow building tile. This also applies to the chimneys, the porch walls and pillars, and the terracing walls of the grounds. The front and rear slopes of the roof of the main part of the house are broken by dormer-window lifts, the walls of which, however, are constructed of tile exclusively, which constitutes the only exception to the alternate rule. The natural color of this brick and tile work is a dark red, and the mortar used is of a creamy white. The roof, possessing especially graceful lines, is covered with mission roofing tile, of a somewhat brighter red, and the several graduation steps of the side chimney are coped with similar tile. Tile lintels of creamy white are placed above each of the doors and windows, and the casings of the doors, and windows are painted to match. The rafters and the exposed ends of the roof beams, as well as all other outside timbers, are painted a light brown color. The general color scheme, considered as a whole, is quite striking and very effective.

A particularly admirable feature of the outside of this house is the immense amount of space devoted to veranda, piazza and pergola. There is a wide veranda that extends across a considerable portion of the front, and the uncovered piazza, or terrace, that occupies the remainder of the front extends back along one side to the rear, terminating at one of the rear corners of the main part of the house in a charming pergola. There is a small one-story projection to the house in the rear, and this pergola is thus made to form an L. It is entirely

open along the outer edge, and the usual pergola beams constitute the only covering, except for the graceful arrangement of vines which are trained to cling to the pillars and crosspieces. Like the covered porch, the open piazza is enclosed by a brick and tile parapet, and all of this porch, piazza and pergola space is floored with tile.

The accompanying floor plans show the arrangement of the interior, and these will merit careful study from

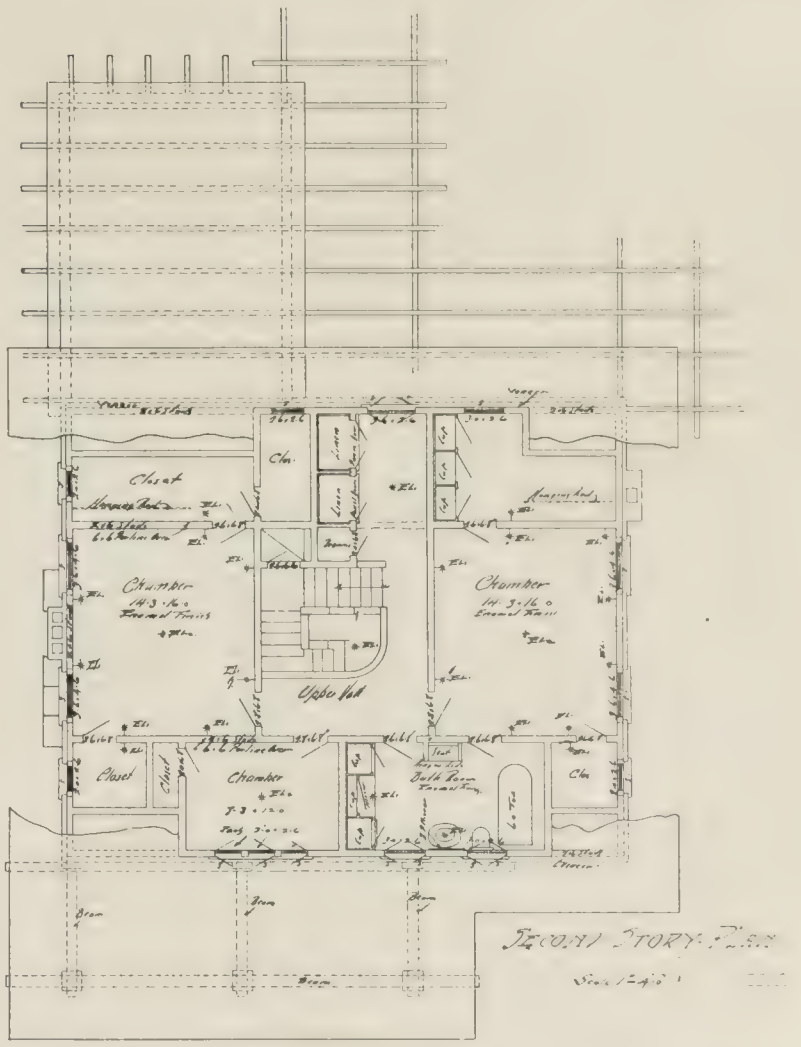


the prospective builder. The front door leads into a large reception hall, from the rear of which ascends the staircase. Sliding glass doors intervene between the reception hall and the music room to the right and the dining room to the left, and from the rear leads a small closed hall that gives access to the stairway to the basement and to the breakfast room. Back of the music room is the library, and back of the dining room is the kitchen, while in the rear wing are the pantry, servant's room, a screened porch, and other conveniences.

Two pairs of French windows open from the music room into the side piazza, and one set each leads from the library and the breakfast room into the rear pergola. Sliding doors also intervene between the music room and the library. The dining room possesses a large tile fireplace and a built-in buffet, and the library contains a smaller fireplace constructed of pressed brick, with a built-in bookcase at each side of it.

The reception hall possesses a beamed ceiling, and its walls are finished with a paneled wainscot. The walls of the library are likewise paneled, and wood cornices are used in the music room and dining room. The woodwork of the reception hall, dining room, music room and library consists of pine, treated to resemble fumed oak in color, and the kitchen and breakfast room are finished in white enamel.

On the second floor are two large bed rooms, one small bed room, a bath room and several closets, the rooms being finished in white enamel. By means of the dormer-window lifts in the front and rear slopes of the roof the ceilings of all of the rooms are of regulation height, and



roomy closets are made to occupy the corners where the ceilings must necessarily be low and irregular.

Two pairs of French windows open from the music house, and a hot-air furnace located here supplies heat to the rooms when required. This bungalow was designed by W. C. Garrett, an architect of Los Angeles, California, and was constructed under the personal supervision of Joseph Simons, the owner. All brick and tile used in the construction of the house are products of Mr. Simon's company.

Dayton (Ohio) Secures Paving Brick Convention

The next annual meeting of the National Paving Brick Manufacturers' Association will be held at Dayton, Ohio, October 11 and 12, 1915. This decision was reached at a meeting of the directors of the national association, which was held in Cleveland during the latter part of May.

It is interesting to note that during the same week the American Society of Municipal Improvements will hold its annual meeting in Dayton and this will insure a large and interested attendance at the meeting of the paving-brick manufacturers.

New Texas Pottery Plant Completed

The Athens Pottery Company, Athens, Texas, has completed its new plant, with the exception of a few kilns, and is shipping several cars of pottery and hollow tile daily. This pottery plant is now the largest in the Southwest, and when running to capacity will employ more than one hundred men and boys.

Questions and Answers

Here are Given the Replies Made by America's Best Authorities to Questions Asked by Our Readers

QUESTIONS sent to this Department will receive prompt attention, answers being returned by mail as soon as possible. Those that have wide interest will be published for the benefit of other clayworkers. The names and addresses of questioners will be held as confidential, and no letters will be forwarded them without being scrutinized by "Brick and Clay Record."

Gets Blue Glaze on Stoneware

657. *California—We enclose two small samples of stoneware "try-pieces." These are both fired on top and one of them was drawn immediately as we stopped firing. The other was drawn after the kiln had cooled. We find that the finished ware looks like the blue "try-piece." The kiln is downdraft, with a stack in the center; we have fired it several times and have found in each instance that after we stopped firing the glaze on the ware turned blue. We believe that this is caused in the cooling of the kiln, as the "try-piece" that was drawn at the time we stopped firing is perfectly white while the one that was drawn after the kiln had cooled has the dull blue finish.*

In cooling we closed the damper in the stack immediately after firing and opened all of the holes in the top of the kiln; about thirty minutes later we closed up the fire boxes. We have also tried leaving the fire boxes open for three hours or until they had turned black but on each occasion we closed the damper in the stack at the time the firing stopped. It might be well to call your attention to the fact that our firing is done with crude oil. If you will give us your opinion in regard to the reason why this ware turns blue after firing, we would appreciate your advice and assistance.

The above question was published in the June 1 issue. Professor Stull's reply is given below:

No doubt you have read Robert Burns' ode to a famous physician who could prescribe curatives based upon evidence sent to him in a "Kale" leaf. There are no doctors in this day and age of enlightenment, who are as wise as the famous doctor of Burns'. With the exception of a few simple cases, the "ceramic doctor" cannot prescribe intelligently from a few symptoms sent to him by mail.

The physician prefers to be on the ground and examine the patient thoroughly by thumping him on the chest, examining his tongue, and taking his temperature and his pulse. From the symptoms thus gathered, the "Doc" decides whether the patient has small-pox or the "pip" and prescribes accordingly. Sometimes "Doc" is undecided as to whether the illness is due to the "pip" or the small-pox or whether it is due to something else. At any rate he always looks wise and, in the latter case applies a "shotgun prescription" trusting that it will get at the seat of the trouble.

Thus it is with the "clay doctor." Seldom is he able to prescribe effectively unless he is right on the ground and carefully studies the operations from the clay bank through to the stock pile. Even though the "clay doctor" may be well trained in his line and backed by years of successful experience, he not infrequently finds cases that are baffling, even in the present light of our ceramic knowledge. And so the "clay doctor" not infrequently applies a "shotgun prescription" taking care not to include anything that will work disastrously.

By examination of the evidence at hand in California's case, we find that trial piece No. 1 drawn from the kiln at the finish shows a good white glaze of excellent gloss for a stoneware glaze. Trial No. 2 which cooled in the kiln is dull and I should say of a brownish shade rather than blue and shows spots apparently of iron fused through the glaze.

A fracture of trial No. 1 shows that the body is a good light stoneware gray color, while a fracture of No. 2 reveals a darker blue stone appearance with occasional spots of gray buff. No. 1 shows a few black specks while No. 2 shows



Trial No. 1 Trial No. 2

a large number of them. Close inspection of No. 2 shows that there is a thin dark brown layer or skin under the glaze which has fused through in spots and along the edges. The appearance of the trials would indicate that the black specks are due to iron—probably present in the clay in the form of pyrite. The clay has evidently been screened about 60 to 80 mesh.

Trial No. 1 being a good clean light stoneware gray would indicate that the firing has been done oxidizing up to the finish. The blue stone appearance of trial No. 2 and its dark brown skin underneath the glaze and dark brown blotches fused through resemble the same effect as is produced by "flashing." As is well known, flashing is produced by alternate oxidation and reduction. The same effect may be caused by steam or water vapor in contact with the ware within the kiln chamber, at or below the finishing temperature. The dull or dead appearance of the glaze may be caused by cooling in a "sulphurous" atmosphere or in an atmosphere of superheated water vapor. It is possible that a reducing, a "sulphurous" or a vapor laden atmosphere may exist for a short time after the damper is closed and the kiln finished. The oil used as fuel very likely contains sulphur, although not stated, and it is probably vaporized by steam. If oil and steam should escape into the fire-boxes through leaky valves and connections after the damper has been closed, a very bad atmosphere in the kiln chamber may exist for a short time.

As a rule, glazes have a better gloss when cooled rapidly.

There is very little danger of cracking by rapid cooling for a short time after the kiln is finished. The greatest danger in cracking lies in too rapid cooling from red heat (about 1,100 degrees Fahr.) down to atmospheric temperature.

For the "shotgun prescription" the following recommendations are made. It might not be advisable to try all these at once, but on the contrary it would be more logical to try one at a time and observe the results.

Use water free from sulphates in washing and tempering the clay. Screen the clay finer. Do not use the water from the filter press over again. In pugging the washed clay, add a little barium carbonate, taking care that it is uniformly distributed and pugged in,—about 6 to 18 lbs. per ton of dry clay should be sufficient. Set the ware in the kiln in the bone-dry condition. Fire the kilns with a good clean oxidizing atmosphere. After the burners are shut off at the finish, see that no oil or steam is leaking in the fire-boxes. After the finish, when the burners are shut off, leave the fire-boxes open, the damper partly open and the crown ventilators closed, allowing the kiln to cool rapidly for a short time. The length of time of this rapid cooling without damage to the ware should be determined by experiment. After the safe limit of rapid cooling has been reached, close the damper and open some of the crown ventilators a little. If the kiln is tight (i. e., not leaky) the remainder of the cooling can be governed by the crown ventilators without closing the fire-boxes unless the clay is very sensitive to cracking.

Discolored Heads on Gray Dry-Pressed Brick

671. *Texas—We manufacture a dry-pressed gray brick, made of fire-clay with manganese in it, and burn it in round, down-draft kilns, the brick being set five-over-two. We watersmoke with wood and finish with oil. We have trouble in getting the heads of the brick the same color as the face, the heads being appreciably darker.*

The question above, with considerable descriptive matter in addition, was published in the June 1 issue, on page 1049. Since then a letter has been received from R. H. West, of Alamogordo, New Mex., which gives another solution. His letter reads:

"In regard to the discoloration on your dry-pressed brick—I have handled southwestern fire-clays for some years and find them very subject to discoloration. In your case, rather than do as you are now doing, I should first weather the clay until it is thoroughly disintegrated and take great care in the setting, trying benches of three high and even setting on head, so that the heads are kept close together when shrunk. Take the usual precautions in watersmoking and raising heat—I say this, although I have had very little trouble in these stages, finding, rather, that the main trouble with an oil fuel, comes in the finishing fires. I usually run up the fire-box heat a little, getting a perfectly clear fire, then drop my damper to about four inches and protect the fire-boxes against any wind, *but do not brick or daub them up, and do not remove any crown covers under twelve hours.* I find the brick do not check and the free admission of air, following a clearing fire, drives off the gases. I think the main fault is in daubing up the finishing fires."

Salt Glazing in Oil Fired Kilns

679. *New Jersey—Can you give us any information on the use of salt for glazing clayware burned in oil-fired kilns? Should the salt be fed in with the blast from the burner or introduced into the furnace through a separate opening, so that the flame may play upon it on the furnace bed?*

Salt glazing in oil-fired furnaces has, without doubt, been done successfully on some plants, although we must admit that we have never been brought in contact with this particular proposition. We would be glad to hear from any of our readers who are familiar with the process, and to pass along their knowledge to this correspondent.

Theoretically, if the salt is volatilized or fumed in the furnace, it should be just as much of a success as if it were placed on a bed of white-hot coals as in a coal-fired furnace. This could be done by employing a fire-clay pan, made to fit into the furnace, so that it can be made white-hot without the flame or blast playing directly into the pan. When it is time to salt, this pan is placed into the furnace and heated, after which the salt is fed into the pan through a hole in the top of the furnace arch. This should fume the salt efficiently, if care is taken not to feed too much salt to the pan at one charge, and so chill the pan, as this would stop the volatilization. It is not, in our judgment, practical to feed the salt with the blast, as this will bring the salt to the ware before the former is volatilized, and this has not, so far as we know, ever been successful.

Dipping Brick to Change Color

627. *Indiana—Is there any way to get different colors on the face of brick by dipping them and then burning?*

The above question was published in the April 6 issue, and a suggestion made that it would be necessary for this correspondent to send us a piece of the brick that he wanted to change in color by the dipping process, and also an exact statement of his process of manufacture.

Since publishing this, we have received a letter from James Witte, of 618 South Main Street, Salt Lake City, Utah, which reads as follows:

"I have a process by which any desired color can be made *no matter what color* the brick ordinarily burns. This color is given by either dipping the brick or spraying it with certain chemicals that are inexpensive. I can adapt these chemicals to become sufficiently fluxed to enable them to set well on the brick, *making the face impervious to moisture.* Up to the present time I have worked out a pure white, a gray, a light blue, a dark blue, a dark brown and a sage green. To the best of my knowledge, I am the first one to work this process, which can be used with any color of clay. I have been successful in putting this surface on red brick at cone 4,—1,958 degrees Fah., and am now putting it on a red burning sewer-pipe clay at cone 8,—2,354 degrees Fah. I am an expert in enameled brick manufacture, also porcelain face-brick and have had a life-long experience in the making of enamels. I am prepared to sell my formulas and will be glad to correspond with the manufacturer whose question you published."

To Remove Scum or "Whitewash" from Brick Wall

676. *Indiana—I have mailed you today a piece of our brick. It is, as you will see, whitwashed in the burning. What I want to know is, if there is a solution of any kind that could be applied to this brick after it is built into the wall, that would remove this scum and prevent its reappearing. I would also like to know if there is any way to prevent this scum from appearing on the brick—that is, what is the best way to treat the clay before or during the pugging, or to regulate the watersmoking or burning so that the white scum will not appear.*

We do not know of any solution that will remove scum or efflorescence from finished brickwork. It has been tried with varying success, but so far as we have been able to learn, the relief has been only temporary and the white stain has reappeared after a short time. If any of our readers have cause to differ with us, we will be glad to know of their experience. Regarding the prevention of the scum in the brick itself, would suggest your reading Lovejoy's "Scumming and Efflorescence" (50c postpaid) and the many articles that have appeared on this subject in "Brick and Clay Record."

The Superintendent

A Department Wherein Our Readers Contribute the Result of Their Own Experience for the Benefit of Their Brother Workers-in-Clay

DISCONTINUING the policy of offering a prize for the best idea submitted for this department, "Brick and Clay Record" will, until further notice, print a series of carefully computed tables for the use of superintendents in clayworking plants. These will be contributed by a well known authority on plant construction, the subjects being chosen with due regard to clayworking needs. As in the past, suggestions and short articles that deal with labor-saving and cost-reducing ideas will be welcomed, and will be paid for as published.

Table of Useful Numbers (Jones and Laughlin)

(The following factors will be found useful in a great number of calculations—the kind that managers of clayworking plants are often called upon to make. They cover a wide field and are well worth a place in the collection of tables that we trust is being made in many yards.)

Lineal feet,	× .00019	miles	U. S. gallons,	× 231	cubic ins.
Lineal yards,	× .0006	miles	Cubic feet	× .8036	U. S. bushel
Square inches,	× .007	square feet	Cubic inches,	× .000466	U. S. bushel
Square feet,	× .111	square yards	U. S. bushel,	× .0495	cubic yards
Square yards,	× .0002067	acres	U. S. bushel,	× 1.2446	cubic feet
Acres,	× 4840	square yards	U. S. bushel,	× 2150.42	cubic inches
Cubic inches,	× .00058	cubic feet	Cylin. ft. of water,	× 6	U. S. galls.
Cubic feet,	× .03704	cubic yards	Lbs. avoirdupois,	× .009	cwt. (112)
Circular inches,	× .00546	square feet	Lbs. avoirdupois,	× .00045	tons (2240)
Cylindrical inches,	× .0004546	cubic feet	Cubic ft. of water,	× 62.5	lbs. avoir.
Cylindrical feet,	× .02909	cubic yards	Cubic ins. of water,	× .03617	lbs. avoir.
Links,	× .22	yards	Cylin. ft. of water,	× 49.1	lbs. avoir.
Links,	× .66	feet	Cylin. ins. of water,	× .02842	lbs. avoir.
Feet,	× 1.5	links	13.44 U. S. gal's of water,		1 cwt.
Width in chains,	× 8	acres per mile	268.8 U. S. gal's of water,		1 ton
183,346 circular inches,		1 square ft.	1.8 cubic ft. of water,		1 cwt.
2200 cylindrical inches,		1 cubic ft.	35.88 cubic ft. of water,		1 ton
Cubic feet,	× 7.48	U. S. galls.	Column of water 12 ins. high, 1 in. dia.,		.341 lbs.
Cubic inches,	× .004329	U. S. galls.			
Cylindrical feet,	× 5.874	U. S. galls.			
Cylindrical inches,	× .0034	U. S. galls.			
U. S. gallons,	× .13367	cubic ft.			

How Do You Buy Your Coal?

How much thought do you give to buying your coal? Do you expend as much gray matter on that process as you do to the fit of your clothes or the part of your hair?

You will, in the course of a season, burn thousands of tons of "some kind of coal" in the kiln furnaces and hundreds more to furnish power for the plant. You are burning on an average over one pound of coal for every brick that you produce, spending from eight to thirty thousand dollars for "some kind of coal."

Do you know that this coal that you are using is the best for your purpose? Do you know that it is the most

economical coal that you can buy—or do you buy it just because you "always have used it," and don't see why you should change? Or do you buy it because it comes to you at the very lowest price that you can secure?

There are many points to be considered, or that should be considered and studied before you place your coal contract. Three of the main points are as follows: 1. The ability and willingness of the mining company to serve to you the coal you want, when you need it. 2. The analysis of the coal, (showing the ability of the coal to do the work), this including ash content, volatile matter, fixed carbon, moisture and sulphur—and B. T. U. content. 3. Price, this should be considered last, and is made up of mine price plus freight charges.

The cheapest coal, in buying price, may be the highest in cost ultimately, because of poor quality. The cheap coal may increase the time of burning, which decreases output and raises overhead; it may be incapable of burning to the floor of the kiln, which means spoiled ware; it may clinker, causing loss in heat during cleaning, and for hours previous to cleaning. A dozen other reasons may be given why you should use a certain coal which is, by the way, the coal best suited to your process and product.

It is a fact that by the judicious selection of the proper coal you can save your company thousands of dollars each year. You ought to do it. You should start now to decide which coal is the *cheapest for you,* not the cheapest per ton.

The Color in Fire Brick

Does the color and appearance of a fire-brick afford any indication of its value as a refractory material? This question is one of great importance to many purchasers, and is a matter about which there is much misunderstanding. Many engineers and builders consider that a fire-brick which is a good, uniform, buff color is the best, their idea being that such a brick has been burned at a high temperature without showing any signs of being affected by the heat. This is an entirely erroneous idea, for it is usually the *underfired* brick which are the best colored and the most uniform, while the brick which have been burned at the higher temperatures are usually spotted with dark brown or black marks, due to iron compounds in the clay.

If a fire-brick is dark colored, it probably contains a considerable proportion of iron oxide. This may or may not be a disadvantage, according as the iron oxide is in a fine or coarse state of division. Very finely divided iron oxide acts as a flux, but the coarser iron sulphides (pyrites) which occur in fire-clays form coarser grains, which do not have so serious an action on the refractoriness of the clay. Consequently, a brick which is very spotty will probably be more refractory than one which is more uniformly red or brown. The proportion of iron cannot be ascertained from the color of the brick, as a finely divided material will produce a greater amount of color than will coarser particles. Repeated analyses of a well-known brand of fire-brick have shown that any attempts to judge the amount of iron from the appearance of the brick is most misleading. As no fire-brick are entirely free from iron oxide, any attempts in this direction are necessarily futile. In other words, the color of the brick is no real criterion of their quality, so far as this may be judged from the amount of iron they contain.

All that the color of a fire-brick indicates is that, if very dark and spotted, it has probably been burned at a high temperature, and is for that reason better than one which is paler in color, and, therefore, has not been so thoroughly burned. The argument is by no means a sound one, for if two brick are made of the same material, and one has been in a hotter part of the kiln than the other, it will be darker in color, through the actual refractoriness of both brick may be identical. The only value in it lies in the fact that a brick which has been so heated as to develop the iron spots must necessarily be capable of withstanding a similar temperature in use, whereas a pale brick which has not been so intensely heated has its refractoriness unproven, and may, for that reason, be regarded with more suspicion than the other. The view that a "nice-looking" brick is the better for refractory purposes is seldom correct.

Sometimes the color of a fire-brick is affected by the density or texture of the material, and, when this is the case, it affords a useful indication of the extent to which the brick has been heated. If, for instance, the brick shows signs of partial fusion, it is clear that it has been heated to a sufficient extent to produce such fusion. Whether this is a sign of a readily fusible material or of an exceptionally high kiln temperature will depend on other information which cannot readily be gained from a mere inspection of the brick.

Users of refractory materials are sometimes misled by small pieces of a dark, slag-like material on the goods, and regard these as signs of partial fusion. To a limited extent this is the case, but for most practical purposes these slag-like masses, unless unusually numerous, may be neglected, as they are merely the product of the iron sulphide and the clay, and are generally so isolated as to have very little effect on the brick as a whole. Moreover, they usually occur most extensively at the surface, and an inspection of a broken surface will be much more favorable than that of surfaces ordinarily exposed.

In short, the man who considers that the heat-resistance or durability of a fire-brick can be judged by its color alone, is likely to be seriously mistaken. The only reliable means of ascertaining the quality of fire-brick is based on a number of tests—most of them requiring considerable time and skill—from which the refractoriness, constancy of volume, and other properties may be ascertained.—"The British Clayworker."

A Bulletin on Boiler Losses

"A Study on Boiler Losses," by A. P. Kratz, has been issued as Bulletin No. 78 of the Engineering Experiment Station of the University of Illinois. This bulletin presents a critical analysis of the data taken from a series of twenty-five trials made on a 500 horsepower Babcock and Wilcox boiler in the University heating plant.

The heat balance has been subdivided so as to isolate and determine the amounts of the several losses chargeable to the boiler, furnace, and setting. Complete forms for calculating a series of boiler trials are also given.

Tests were made also upon some samples of weathered coal. No difficulty was experienced in burning this coal, but it was found that it had deteriorated during the weathering until it was about the same composition and grade as fresh Vermilion County screenings.

Copies of Bulletin No. 78 may by obtained gratis upon application to the Engineering Experiment Station, University of Illinois, Urbana, Illinois.

Turn Back to Page 1116

Then Take Out Your Fountain-Pen

And Do Your Duty!

The Letter Box

A Place Wherein Our Readers May Give Publicity to Their Opinions on Subjects of General Interest

THE best indication of the attention given a magazine by its readers is found in the number and the character of the letters it receives, commenting upon its policies and upon the articles that have appeared in its pages. In this regard, "Brick and Clay Record" is particularly fortunate, scarcely a day passing that does not bring some valuable advice. Only a few of these letters can be published, on account of limited space, and only those that have general interest are printed in this department.

Wants Small Portable Kiln

Under a censor's seal and delayed in transit by war-zones and other incidentals of these busy days, comes a letter from Bombay, in India. In it a subscriber to this magazine has something interesting to say—what it is will be seen by further reading. The letter is from Nagardas Vatsaraj, who writes from Matoonga, Bombay, under date of April 17:

Your letter dated the 25th February reached me in the first week in this month, thanks to the censor here. I have been, as I said in my last letter, manufacturing plumbago and clay crucibles on a very small scale, and as the prospects for the pottery industry here seem to be bright, I intend to experiment with wall, ground and roofing tile, besides improving the crucibles and going into the manufacture of acid jars and sewer-pipes, for which there is a great demand here. But for the main part, I propose to devote myself to stoneware and earthenware. With this in view I ordered two tile presses from England and a small, portable kiln from America. The presses are all right, but the kiln does not give me the results I want to obtain, as the temperature rises too quickly for my purposes. The kiln is all right for overglazing china and pottery, but I want a kiln that will very slowly raise the temperature. I have an up-draft kiln of 4 ft. diameter, but it does not give me very satisfactory results. The fuel that is most used here is wood, although coal can be obtained in good quantity. Coal costs more, however, and so we would like to avoid having to use it. What I want now is a small, portable kiln that is somewhere around four feet in diameter, which would slowly raise the heat to the degree required to properly burn earthenware and stoneware. This would serve my present purpose, and if the kiln could be used for glazing as well, I should consider myself doubly fortunate. Perhaps some of your readers know who makes a kiln of this kind and have had some experience with one.

If any of our readers can assist us in securing the kind of a kiln Mr. Vatsaraj wants, he and we, as well, will be very grateful.

Some Practical Hints on Burning

George W. Cook, of Ithaca, N. Y., writes an interesting letter about burning that has some valuable hints for brickmakers who have had trouble in getting perfect ware in the lower courses of their kilns. He writes:

The writer is not a college man, but has learned in the school of experience—and experience that covers more than forty-five years, and many branches of the industry. I began as a water boy and have done more than work in the trade—I have studied it, and I believe that it is my calling in life's work. I write this letter, thinking that it may be of some help to other brickmakers.

Some years ago, I had a great deal of trouble with down-draft kilns, and I made arrangements so that they could be changed to up-draft before the watersmoking, and back to down-draft, for burning. This overcame the trouble I had had with checked brick in the bottom of the kiln and also overcame the coke-like substance in the interstices, when coal was used. I tried using wood for the watersmoking, at first, but did not get as good results as I had obtained with coal, as I could keep a small amount of fire banked down, so securing a small amount of hot air to warm the brick slowly and start the sweating. This warmed the green brick through, and enabled me to do my watersmoking in about half the time that I had previously taken when burning down-draft. It also made it possible for the brick in the bottom of the kiln to dry slowly, instead of becoming soft, as they did when I watersmoked down-draft.

In this way, too, the weight of the upper courses was carried on the lower courses without loss, for the sustaining brick were dry and hard, instead of being damp and soft, as they were when I watersmoked down-draft, for these lower courses, in down-draft watersmoking, took moisture from the upper brick and were made soft by this process, before the flues in the kiln bottom were sufficiently heated to give a draft strong enough to take away the moisture as fast as it was brought out of the upper brick.

Nearly any style of down-draft kiln can be arranged so that it will watersmoke up-draft for a very small expense, and the small holes in the kiln crowns can be uncovered, so that the moisture can pass out there, instead of being drawn down and out of the stack. One thing that must be considered, and which is of prime importance, is that the heat must come in contact with the entire bottom of the kiln, and not be led to one or two of the outlets only.

Any experienced brick burner can arrange his fires so that this point is cared for, and I can say truthfully that I have oftentimes watersmoked a kiln of paving-brick down-draft through the manhole of the outside flue that leads to the stack, and the stack shut off from the flue, thus providing for the heating of the stack by the closing of the manhole and the lifting of the damper, as soon as the watersmoking was finished.

In this way, a saving in time was effected, as I had a warm stack to work to, when I changed over to down-draft. In this way, a simple expedient saved time and money, and gave me much better results. I hope that some of the views I have expressed will be of value to your readers.

Here is another case of a brickmaker whose heart is in the right place. It would seem that his head was likewise in the right place, for he knows how to use it and to make his knowledge pay.

Brick vs. Hollow Tile

One of our readers, whose name is withheld, writes us of a "condition" that exists in the city where he operates a brick plant. His situation and mental attitude is very much like that of a number of other readers, so his letter is published in full.

We are having considerable competition in this city with hollow tile, and we would ask that you please mail us any literature that you have on hand with reference to meeting this competition. Any suggestions that you may offer will be highly appreciated. We do not want to engage in the hollow tile business if it can possibly be avoided.

"Brick and Clay Record's" position in the field of clay products is, we fear, somewhat misunderstood by this corre-

spondent. In the March 2 issue, it was stated editorially, that in our opinion, the word "brick" should be made to include everything made of burned clay that enters in building construction. In our opinion there is little difference between a solid brick and a hollow brick and just as little between a hollow tile and a hollow brick. If this correspondent would accept this viewpoint, his letter would read very differently, and would spell out the solution of his problem. In that case, he would have written, "We are having considerable competition in this city from brickmakers who are making their brick much larger than we make ours, the brick having large air-spaces." The solution would be in finding out whether these "large brick" were as good material for building purposes as smaller, solid brick, and whether their use was as economical, from a price standpoint—not so much per thousand brick, but so much per cubic foot of wall. If it were found that the "large brick" were a better proposition for the builders, would not the thought quickly suggest itself that it would be a pretty good idea to "meet the competition" by making similar material?

Freight Tariffs and Troubles

Devoted to Information and Advice on Freight Tariffs and on Cases Before the Interstate Commerce Commission

IN HANDING DOWN their decision in case No. 7149, the Thomas Fitzgerald Company, of Fredonia, N. Y., vs. the Buffalo, Rochester and Pittsburgh Railway Company, the Interstate Commerce Commissioners say: "Demurrage charges assessed on twenty-three carloads of brick at Springville, N. Y., not found to have been unreasonable or improperly assessed. Complaint dismissed."

The Drake Marble and Tile Company, of St. Paul, Minn., has entered a complaint with the commission against the Chicago, St. Paul, Minneapolis and Omaha Railway Company; the Chicago and Northwestern Railway Company, and a number of other carriers. A shipment of nineteen barrels of floor and wall tile were made on October 6, 1913, from Indianapolis, Ind., to Belle Plaine, Minn., on which the rate charged was at $1.00 per one hundred pounds. This, the complaint claims, is an unreasonable rate and reparation is asked.

The commissioners have just announced amendments to two conference rulings of interest to all shippers. Following is the amendment, as announced, to Conference Ruling No. 286(d) for the "adjustment of claims for damages resulting from the misrouting of freight":

"It is the duty of a carrier to make delivery in accordance with routing directions. Where such routing instructions have not been followed and delivery is tendered at another terminal than that designated, it remains the duty of the delivering carrier to make delivery at the terminal designated in routing instructions, either by a switch movement or by carting. In either event the additional expense involved in making such delivery must be borne entirely by the carrier responsible for the misrouting and the reimbursement thereof to the delivering carrier may be made by the carrier at fault without a specific order of the Commission.

"In case the carrier is unable to deliver the shipment without unreasonable delay at the terminal designated, and the consignee elects to accept the shipment at the terminal where delivery has been erroneously offered, the shipper or consignee is entitled to recover the damages in the sum of the difference between the expense of drayage actually incurred at a reasonable charge therefor and the expense which would have been incurred if proper delivery had been effected. Carriers admitting the justice of claims of this character should file an application with the commission for authority to pay the same; each application to admit responsibility for the misrouting and be supported by affidavit of the agent of the carrier cognizant of the facts relied upon to justify the payment."

The commission has also adopted the following conference ruling to supersede previous rulings for "demurrage and storage rules applicable to shipments":

"Upon inquiry and to remove the confusion that exists among carriers and shippers, it is held, that demurrage and storage in transit are controlled by the tariff in effect when the initial movement begins; that demurrage on outbound shipments is controlled by the tariff in effect when the car is actually set for loading; that demurrage and track storage at destination are controlled by the tariff in effect when the car is actually or constructively set for unloading; and that off-track storage by a carrier at destination, in its warehouse or otherwise, is controlled by the tariff in effect at the time such storage begins."

Changes in Freight Rates

Since our last issue, the following freight tariffs affecting clay products have become effective:

FROM EASTERN POINTS

From Beech Creek, Lock Haven, Mill Hall, Monument and Orviston, Pa., building, common and paving brick, to St. Benedict, Pa., $1.58 per net ton.

From Black Rock, Buffalo and Suspension Bridge, N. Y., fire brick and fire clay, to Chicago, Ill., 10.2c per cwt.; to East St. Louis, Ill., and St. Louis, Mo., 13.6c per cwt.

From Inkerman and Hilldale, Pa., brick, to Peckville, Jessup and Olyphant, Pa., 70c per net ton; to Pittston, Scranton, Avoca, Dunmore and South Scranton, Pa., 63c per net ton; to Port Jervis and Lackawaxen, Pa., $1.62 per net ton; to Hawley, Pa., $1.16 per net ton; to West Pittston and Wyoming, Pa., 68c per net ton; to Luzerne, Pa., 74c per net ton; to Mt. Pocono, Pa., $1.05 per net ton, and to Lehigh, Pa., 89c per net ton.

From Penbryn, N. J., brick and articles taking the same rates, to Cedarville, N. J., 80c per net ton.

From Toledo, Ohio, brick and articles taking the same rates, to Detroit, Mich., 74c per net ton; to Monroe, Mich., 58c per net ton.

FROM MIDDLE WEST POINTS

From Belleville, Ill., enameled brick in carload lots and also in mixed carloads with other brick, to St. Paul, Minn., 14¾c per cwt.; to Duluth, Minn., 20¼c per cwt.

(*Continued on page* 1149.)

Machinery and Equipment

Descriptions of Machinery, Appliances and Accessories that Make for Efficiency on Clayworking Plants

Grath Peerless Press

The Jersey Clay Products Company operates a brick plant located at Newbern, Ill., about 12 miles north of Alton, Ill., on the C. P. & St. L. Railroad. This plant was started about 22 years ago with one 5-mould dry press and one Grath patent down-draft kiln. From time to time additions were made to the plant until at the present time it has five patent down-draft kilns running



View of Plant of Jersey Clay Products Company

in capacity of from 127,000 to 190,000 brick. There are two kilns having a capacity of 165,000, two of a capacity of 190,000 brick, and one small kiln.

The plant is equipped with a large storage shed. All kilns are thoroughly protected from the weather by kiln sheds. There is a clay shed having a capacity of sufficient clay to make nearly three million brick. The machinery is composed of a 75 h. p. boiler, a 60 h. p. engine, Fernholtz pulverizer, clay conveyor, elevator, two clay mixers, one 4-mould Grath Peerless press, one 2-mould Grath Giant press, machine shop with drill press, lathe, planer, and additional small engine to run the machine shop separately from the balance of the plant.

The clay used is a surface clay requiring a very heavy pressure in order to make a good brick. The original dry press would not stand up to make the desired quality of brick and was finally discarded. Then, two 4-mould presses of another make were placed in use. These were operated for about six or eight years but did not give the desired capacity and gave way to two other 4-mould dry presses. These were not satisfactory either, and early in 1914 they were put aside for the Grath Peerless dry presses.

After operating the two Grath presses less than a month it was found that the capacity of the 4-mould Grath Peerless press was more than sufficient to take care of the kiln capacity of the plant and the 2-mould press has been shut down ever since and covered with a cloth to protect same from the dirt.

The 4-mould Grath Peerless press is giving wonderful results. It is capable of turning out 34,000 first-class pressed brick in ten hours' time. It is operating right along whenever there is a kiln to fill at a speed of from thirteen to fourteen revolutions per minute, which is fifty per cent larger capacity than with any other 4-mould press in the market.

In fact, with the 4-mould Peerless press the brick plant gets as large a capacity as it ever did with the two 4-mould presses formerly used.

The Peerless press has now been in operation since January, 1914, and has run practically continually with the exception of about two months during the cold weather in the winter.

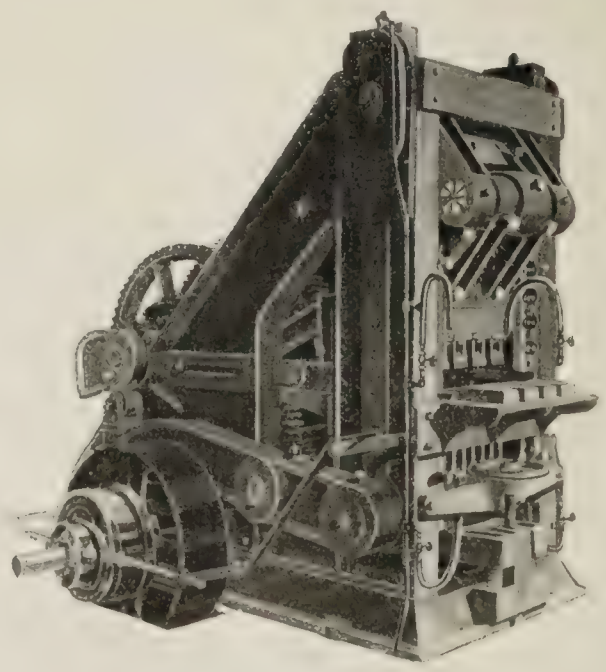
It is always ready to turn out thirty to thirty-two thousand brick whenever there is an empty kiln to fill. The superintendent, in order to show the wonderful capacity of this press, one day turned out 36,000 brick in ten hours and fifteen minutes.

The Grath Peerless press is made by the Illinois Supply & Construction Company, Century building, St. Louis, Mo., and they will be glad to give further details to any clayworker who has a dry or semi-dry clay or shale.

Direct Current Commutating Pole Motors

The General Electric Company has recently issued Bulletin No. 41013, giving a detailed description of that company's direct current commutating pole motors, known as Type RC.

These motors are built with a frame of cast steel of medium weight with symmetrical section. They can be used with a sliding base which maintains a correct driving alignment, and which, with the adjustable shields, per-



Grath Peerless Four-Mold Press

mits the installation of the motor on either the floor, wall or ceiling. These motors may be equipped with covers, rendering them what is known as semi-inclosed, totally inclosed or self-ventilated. They are wound for 115, 230 and 550 volts direct current circuits, with permissible volt-

age range of from 110 to 125, 220 to 250, and 500 to 600 volts.

Illustrations of the various parts of the motors, together with dimension diagrams, are included in the publication.

A Three Time Pioneer

Fire-brick have been manufactured in Hancock county, W. Va., for more than a half century, but very few people are aware of the fact that Hancock county is in reality the "Mother of Brick Paved Roads," and that Capt. John Porter, a life long resident of that county, may properly be called the "Father of Brick Paved Roads."

Away back in 1883—32 years ago—the use of brick or block as a paving material for roadways was an unheard of thing, but at that time, Captain Porter, engaged in manufacturing fire-brick for iron and steel mills and other purposes, recognized their value as suitable material for the paving of roads, and with characteristic energy, undertook to demonstrate to the world their worth in the construction of cheap, durable and satisfactory highways. How well he succeeded is best illustrated by the thousands of miles of roads now paved with vitrified brick and block and the hundreds of busy plants now engaged in their manufacture.

It is not to be supposed that the introduction of brick and block as a suitable material for road improvement was accomplished without strenuous opposition, courageous effort and great expense, and truly to Captain Porter belongs the credit for their introduction.

Captain Porter, after strenuous efforts in the City of



View of Kilns at Kenilworth Plant

Wheeling, W. Va., in 1883, prevailed upon the city fathers to try out what to many appeared an impossible and useless method of road improvement, but finally Chapline street was paved with vitrified fire clay paving-brick and was the first street in the United States to be so paved. Today, among the highly prized possessions of Capt. Porter are letters of recommendation and commendation given to him by the City Fathers and business men of Wheeling, and other cities.

Capt. John Porter, the veritable "Father of Brick Paved Roads," still continues an extensive producer of these materials. He is president and general manager of the Kenilworth Brick Company, Kenilworth, W. Va. (P. O. address East Liverpool, Ohio), the first brick manufacturers in the New Cumberland district to install a clam-shell. They have in service a 1¼ yd. clam-shell bucket made by the Lakewood Engineering Company, Cleveland, Ohio, which has replaced 8 men at $2.00 per day. The weather does not interfere with the operation of this clam-shell, whereas before its installation, when the work was done by day laborers, it was impossible to get them to work in bad weather.

Again, this company were pioneers in installing a gasoline locomotive, which at a cost of $4.50 per day is doing more work in a more satisfactory manner than the mule haulage, which formerly cost them $11.00 per day.

The Kenilworth Brick Company has the largest single plant in the New Cumberland district and manufactures exclusively Porter National paving blocks. The plant has 23 round, down-draft kilns; an E. M. Freese & Company Model GC auger machine with size 30 rotary automatic cutter, capable of making 100,000 bricks or 75,000 paving blocks in a 10-hour day; and two 9 ft. pans manufactured by The Stevenson Company, of Wellsville, Ohio.



Showing the Milwaukee Locomotive in Operation

The W-20, 2½ ton, 35½ in. gauge, Milwaukee gasoline locomotive, manufactured by the Milwaukee Locomotive Manufacturing Company, Milwaukee, Wis., hauls from two points, i. e., No. 1 and No. 2 clay mines. The haul from No. 1 to the dump is 1,500 ft. one way. The empty cars weigh 500 lb.; load weighs 7,500 lb.; loaded car weighs 8,000 lb. The motor hauls 12-16 tons per trip. The maximum grade against the loads does not exceed 3 per cent. The haul from No. 2 mine is 700 ft. from pit mouth to dumping point. The motor hauls from 12-16 tons per trip under practically the same conditions as at mine No. 1.

Before the installation of this locomotive, 4 mules at 75 cents per day, $3.00, and 4 drivers at $2.00 per day, $8.00, or haulage at a total cost of $11.00 per day, were



Lakewood Clam Shell Bucket, Which Has Replaced Eight Men

required to do less work than is now being done by the motor. The operating expenses of the gasoline locomotive are as follows:

H. M. DEAVITT, *Ceramic Chemist*
209 South LaSalle Street, Chicago
Best equipped consulting laboratory in the West for the analysis of clays and clay products.
Equipped for research work in all branches of the clay industry, including fluxes, glazes, burning, etc.
Expert examination of deposits and plants a specialty.

The DEWEY 5-Ton Locomotive
It never balks on heavy loads or grades
Why not let the Dewey do *your* work?
DEWEY BROS., Inc., Goldsboro, N. C.

Clearfield Brick Machinery
FOR HARD SERVICE
Literature on Request
Clearfield Machine Shops, Clearfield, Pa.

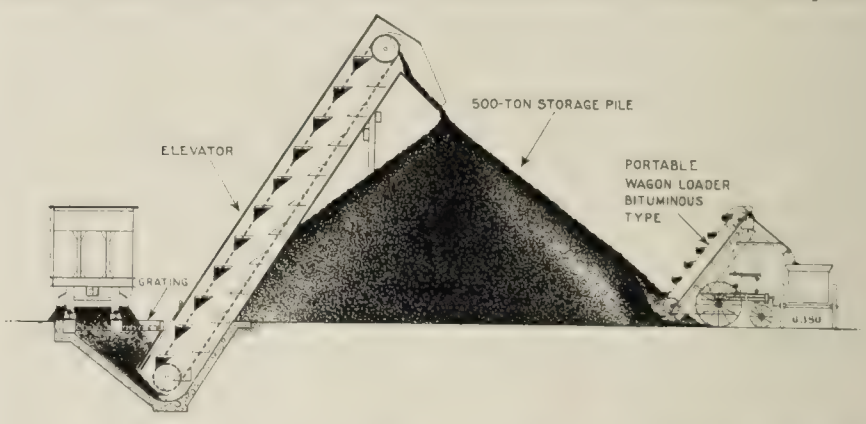
DRYER CARS
ALL STYLES—ALL SIZES
H. W. GERLOCK, Huntingdon, Penna.

Electrical Pyrometers
for
Every Temperature Measurement
Accuracy
Simplicity
Durability
Is what you want in a pyrometer
Is what your burner needs
Is what we furnish
Sander Instrument Co.
136 19th Ave. Irvington, New Jersey

General Traffic Association
Incorporated
Woodward Building, Washington, D. C.
Composed of expert traffic men and attorneys who practice before the Interstate Commerce Commission, the various State Commissions and all the Courts. Freight bills audited, claims for overcharge and loss and damage collected, cases prepared and handled before the Interstate Commerce Commission, where shippers and receivers feel that existing rates are unjust, excessive, inequitable, unreasonable or discriminatory, or will assist attorneys or traffic organizations in the preparation of cases. Correspondence solicited.

1 runner, at $2.00 per day	$2.00
1 triprider, at $1.75 per day	1.75
6 gals. gasoline at 10c per gal	.60
1 qt. oil, at 8c	.08
Cup grease, waste, etc	.07
Daily operating cost per 10 hr. day	$4.50

The plant was formerly shut down on an average of 6 days per month, waiting for clay, before the installation of this locomotive, whereas since its installation and with the same number of miners working, the clay mines are shut down 5 days per month on account of having a *surplus*



of clay. The miners used to clean up mining clay at 4 or 4:30 o'clock in the afternoon, whereas now, not having to wait for empty cars, they clean up at 2:30 or 3 o'clock. These shorter hours, no delays, etc., have made the working conditions much more satisfactory to the men.

Coal Unloader and Loader

After noting the design and description of a coal car unloader in the last issue of "Brick and Clay Record," The Link Belt Company have sent in the accompanying cuts, showing a car-unloader and a cart loader.

These two machines accomplish the same purpose for which the previously illustrated unloader was designed, but do so at a greatly reduced initial cost.

The unloader is simple in design, but stout, and is up to the usual high grade of Link Belt products. The overhead bin can be dispensed with if desired, and ground storage used. If so, the one unloader can easily store



How the Link Belt Loader Works

five hundred tons. This stored coal can then be reclaimed by the wagon loader as shown.

The economy of the installations (one or both) is such that it will pay for itself within the year on any of the medium sized clay plants.

It has four elements of saving: time, labor and demurrage, and less coal broken up and lost in the dirt.

The Link Belt Company, Chicago, Ill., will be glad to have their engineers submit estimates and designs for your particular needs.

Freight Tariffs and Troubles

(*Continued from page* 1145.)

From Chicago, Ill., and Burlington, Ia., brick (except bath or enameled) and other clay products, to Breckenridge and Moorehead, Minn., and Wahpeton and Fargo, N. D., 19c per cwt.; to Edgeley and Oakes, N. D., 20c per cwt.

From Chicago, Ill., brick (except both or enameled) and other clay products, to Franklin, Nortonville, Millarton, Sydney, Klose's Spur, Homer, Jamestown, Clementsville and Wimbledon, N. D., 22c per cwt.

From Delaware, Valleycrossing and McArthur, Ohio, brick, fireproofing and clay products, to Alberta, Alta Vista, Brookneal, Buckeville, Jarratt, Kilby, Lynchburg, McHerrin, Norfolk, Petersburg, Pinners Point, Portsmouth, Richmond, Roanoke, St. Paul and Suffolk, Va., 11.25c per cwt.

From Edwardsville and LeClaire, Ill., brick, to Ashland, Atlanta, Delavan, Drake, Hill View, Lincoln, Louisiana, Nebo, Peark, Pleasant Hill and Straut, Ill., $1.10 per net ton; to Murrayville, Roodhouse, Whitehall, Woodson, Jacksonville, Jerseyville, Kane, Manchester, Berdan, Carrollton and Delhi, Ill., 75c per net ton; to Virden, Girard, Godfrey, Brighton and Carlinville, Ill., 60c per net ton; to Greenfield, Hagaman and Eldred, Ill., 90c per net ton; to Auburn, Ill., 80c per net ton.

From Galesburg and E. Mt. Madison, Ill., brick and other clay products, to Boston, Mass., 27.9c per cwt.; to New York, N. Y., 25.9c per cwt.; to Philadelphia, Pa., 23.9c per cwt.; to Baltimore, Md., 22.9c per cwt.; to Cumberland, Md., 20.7c per cwt.; to Albany, N. Y., 24.9c per cwt.; to Utica, N. Y., 23.5c per cwt; to Syracuse, N. Y., 21.8c per cwt.; to Rochester, N. Y., 19.7c per cwt.; to Montreal, Que., 27.7c per cwt., and to Quebec, Que., 32.7c per cwt.

From Hollandale, Wis., brick and articles taking the same rates to Apple River, Council Hill, East Dubuque, Eleroy, Fields, Galena, Lena, Menominee, Nora, Sales Mound, Wadham and Warren, Ill., and Dubuque, Ia., $1.05 per net ton.

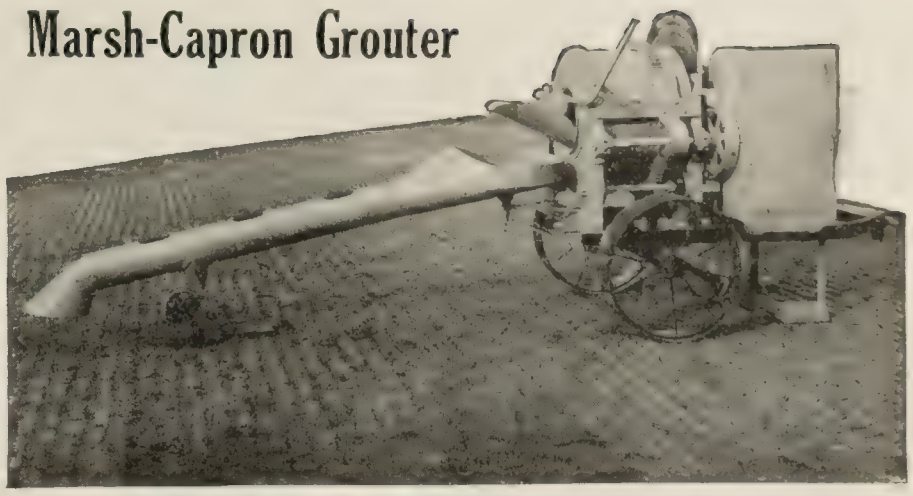
From Joliet, Ill., brick and other clay products, to Boston, Mass., and Montreal, Que., 24.1c per cwt.; to New York, N. Y., 22.1c per cwt.; to Philadelphia, Pa., 20.1c per cwt.; to Cumberland, Md., and Syracuse, N. Y., 17.7c per cwt.; to Albany, N. Y., 21.2c per cwt.; to Utica, N. Y., 19.9c per cwt.; to Rochester, N. Y., 16.8c per cwt., and to Quebec, Que., 29.1c per cwt.

From Joliet, Ill., brick, to Buchanan and Niles, Mich., 68c per net ton; to Elkhart, Ind., 84c per net ton; to LaPorte, Ind., 63c per net ton; to Michigan City, Ind., 47c per net ton; to Mishawaka, Ind., 79c per net ton; to South Bend, Ind., 68c per net ton.

From LaCrosse, Wis., Winona, Minn., and other points in Iowa, Minnesota and Wisconsin, enameled brick, in carload lots and in mixed carloads with other brick, to Chicago and Springfield, Ill., and St. Louis, Mo., 14c per cwt.; to Danville, Ill., 15c per cwt.

From Menominee, Wis., enameled brick in carload lots and in mixed carloads with other brick, to Dubuque, Ia., and Peoria, Ill., 17c per cwt.; to St. Louis, Mo., 20c per cwt.

Marsh-Capron Grouter



Most economical, easiest and most satisfactory grouting is done with this machine. Write for price.

MARSH-CAPRON MFG. CO., 461 Old Colony Bldg., Chicago

Broderick & Bascom Rope Co.

Manufacturers of

Aerial Wire Rope Tramways

Yellow Strand Wire Rope

Wire Rope of Every Description

805-809 N. Main St. St. Louis, Mo.



PYROMETERS

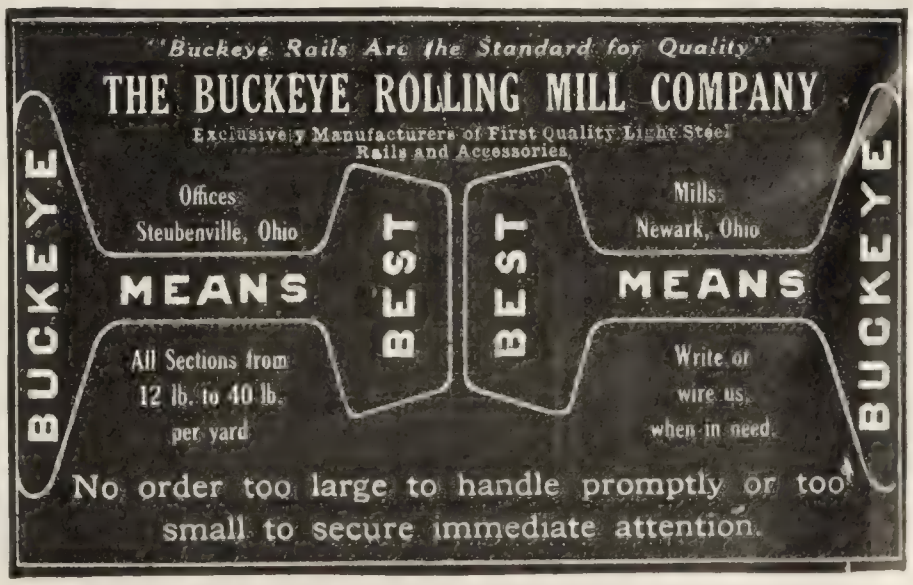
"We take pleasure in handing you enclosed order of a duplicate installation of your equipment at our Findlay, O., plant. This installation to be placed at our Washington, Pa., plant."

The Findlay Clay Pot Co.

This is the inevitable result of a Stupakoff installation.

The Stupakoff Laboratories

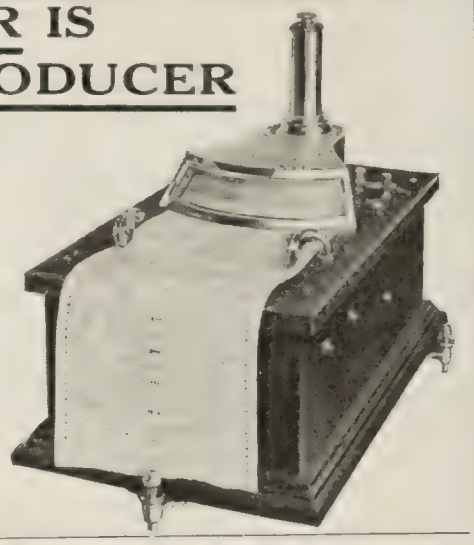
Pittsburg, Pa.



THE BURNER IS THE PRODUCER

What does he produce? At intervals does he have kilns that are
Underburned
Overburned
Off color
Under test
or swelled ?

Eliminate the chances for this—give him a Price Pyrometer.



The Price Electric Co.
12367 Euclid Ave.
Cleveland, Ohio

The CINCINNATI FROG & SWITCH COMPANY
MANUFACTURERS OF
TRACK EQUIPMENT FOR
STEAM AND ELECTRIC RAILROADS
MINES AND MILLS
CINCINNATI, O.

Any Kind of Track Equipment, Standard or Special, Shipped the Day You Want It

Catalog C Pictures It All—Copy Sent on Request

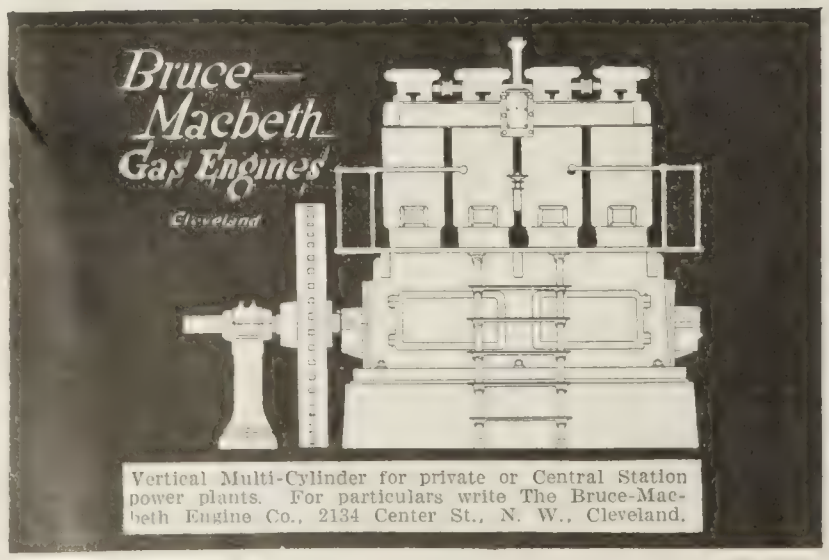
CARS

Pettigrew Dryer Cars are strong, yet easily moved, and will not warp in the dry kilns. Have been used for years by leading brick manufacturers.

We also manufacture special cars, turntables, grate bars and grey iron castings.
Prompt and Satisfactory Service Guaranteed.

Pettigrew Foundry Co.
Harvey - - Illinois

CARS CARS CARS



Vertical Multi-Cylinder for private or Central Station power plants. For particulars write The Bruce-Macbeth Engine Co., 2134 Center St., N. W., Cleveland.



"THIS COUNTRY," said a well known common-brick manufacturer, "is headed straight for a great period of prosperity. There is not a doubt but that there will be a market for clay products such as never has been seen before in this country. We must not overlook the presence of the great law of averages. For seven years or more we have been gradually going to the negative side of the pendulum, reaching the maximum negative sweep in September of last year. Gradually the return has been developing until now the New York stock market cannot note an increased pulse beat when the President holds out the big hand of honorable conciliation not closed in belligerency, but open—with palm up.

"When Wall street can weather a condition like that it is high time for us to believe that fundamental conditions in this country are not bad, nor are they deteriorating, but improving. The sooner American business men learn the true message of the Wall street barometer, the quicker will collections be put upon a business-like basis and everybody will be able to get back to normal ways of trading."

There are reasons to believe that business conditions are improving in the clay products field. In New York city the May building reports show a $6,000,000 gain. Chicago, with a strike on, showed a gain in plan filings of more than a million dollars, and of all the big cities reporting to Bradstreets, only Milwaukee showed a decrease. There are about 1,700 miles of street and road work specified for brick paving now open or about to be opened. Railroad construction is proceeding because of the prospect of higher prices in practically every commodity between now and autumn and suburban construction work is taking a tremendous amount of fireproofing terra-cotta.

With reference to high prices of building commodities, attention is called to the general state of building commodity prices averaged for the country. Structural steel is up ten cents and may go further after the turn of the first half of the year. Iron is dearer, lead, copper, brass and spelter are all up to unheard of prices, tar, tar paper, building paper, and all composition material used in building construction is high and will go higher.

The situation with reference to the business trend in the clay products industry might be said to be fair to firming. There is considerable spottiness to trade in building materials throughout the country, but there is a sounder financial condition today than there has been since the war began. This means that money is beginning to come back to this country for investment that formerly was used for buying up American securities held abroad. With a trade balance of $130,000,000 in our favor on June 1, nobody need longer feel pessimistic about tomorrow's business.

In the Wake of the News

Being Brief Mention of the Host of Interesting Things That Have Happened During the Past Fortnight

ALABAMA

The Gulf Brick and Tile Company, Mobile, Ala., has filed incorporation papers to engage in the manufacture of brick and tile. The capital stock is placed at $50,000 and the incorporators are: J. K. Fox, Fowl River, Ala.; George J. Bates, and L. L. Duggar, Mobile, Ala.

Conditions in the Birmingham (Ala.) district are improving. The Graves paving brick plant is running full; the Bessemer Fire Brick Company's plant at Ensley, which makes fireproofing, is also at capacity, and is shipping large quantities of its material to the southeastern coast cities. The North Birmingham Firebrick and Fireproofing Company has more orders than it can fill for weeks ahead. Hollow block silos are fast coming into favor, and many sales are being made in Alabama, Mississippi and Georgia.

COLORADO

According to reports received by the Denver (Colo.) Manufacturers' Association, the manufacturing business in that city has doubled and tripled itself during the past three months. President W. J. H. Doran states that every brickmaker in the city has booked more orders in the last thirty days than he can fill in three months. The Denver Pressed Brick Company is among the local concerns which report a large increase in business.

CONNECTICUT

Murray Brothers Brick Company, Berlin, Conn., is now engaged in the installation of new electric machinery, consisting of an automatic shovel and electrically driven clay conveyors, making it possible for this company to turn out a much larger number of brick than formerly, because of the efficiency of the new machinery. These improvements place this plant among the most modern in the state.

DISTRICT OF COLUMBIA

The District of Columbia Commissioners have just awarded the contract for furnishing 230,000 brick for the new Central High School building to the Adamant Clay Products Company, of Martinsburg, W. Va.

Washington, D. C., brick men are interested in specifications just out calling for brick to be used in the new building for the Bureau of Standards, the cost of which will be about $200,000; also in the specifications for the new office building for the Department of the Interior, to cost about the same amount and to be built of brick.

ILLINOIS

The General Refractories Company, of New York, has opened a sales office in Chicago, under the management of F. R. Minton.

The National Grinding Company, Ottawa, Ill., has been incorporated to grind clay and other minerals, by J. B. Herring, C. B. Herring, F. A. Cebulski and George J. Gleim. In addition to this grinding work, the incorporation papers call for the manufacture of clay products.

A very appreciable amount of "Harvard" brick is being

"GRIPWELL" Pulley Covering



Does ONE Thing and Does it WELL

Stops Belt Slipping

Belt slipping gives your engineer his young gray hairs and works untold havoc with your fuel bills, sending them skyhooting high regardless of the work you get done. "Gripwell," as the picture shows, is applied to the pulley together with a specially prepared canvas. It gives the PULLEY a leather-like surface. It gives the BELT a greater driving power — 30% greater—or enables you to run the belt ½ slacker under a full load. "Gripwell" does not injure the belts; it is actually a belt preservative. Its use means a saving in money, time, labor, oil, power and fuel. Works equally well with all kinds of belting; canvas, leather or rubber. Doesn't your business judgment prompt you to take it up?

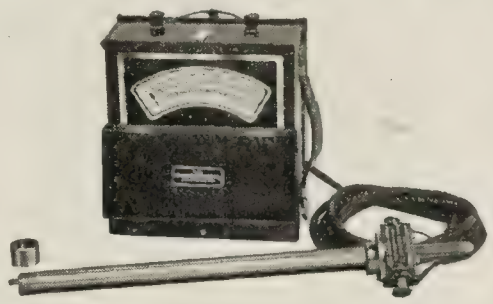
Write to-day for illustrated folder No. 14.

SOLD ON FIVE-YEAR GUARANTEE

"Gripwell" Pulley Covering is guaranteed for five years if applied according to directions. Not affected by acids, fumes, smoke, steam or climatic conditions. Price 75c per lb., f. o. b. New York.

"Gripwell" Pulley Covering Co.
601 Candler Bldg., New York City, N.Y.

PYROMETERS



One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

The Brown Instrument Co.
Philadelphia, Pa.
New York Pittsburgh Chicago

Sand-Lime Brick Plants and Machinery

Especial attention to complete plants.
We pioneered the Sand-Lime Brick business in America.
We have the "Know-How" and the Equipment.

Let us Serve You.

Jackson & Church Company
Saginaw, Michigan

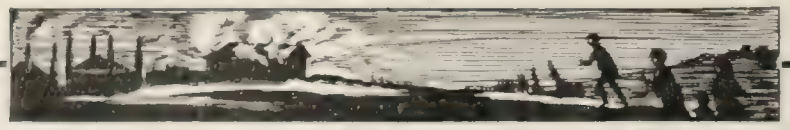
PERFORATED METAL SCREENS

As required for BRICK MAKERS USES.



Manufactured by
HENDRICK MFG. CO.
CARBONDALE, PA.

New York Office
Room 1027 Cortlandt Building



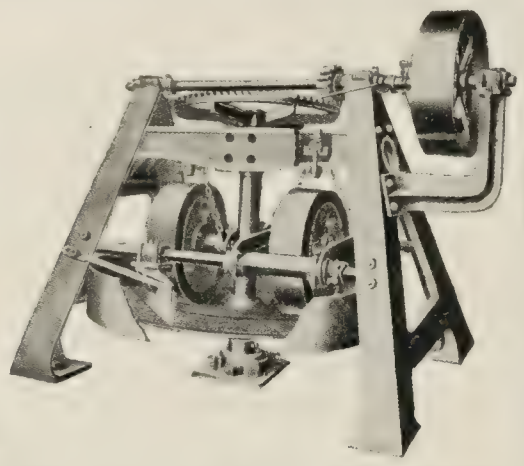


In the long hours of the quiet night Things DID Happen
Was it your plant?
It may be some time.

A Hardinge Watchman's Clock
helps the burner and the watchman.
It prevents fire, by keeping the watchman constantly watching.
It prevents chilled kilns in the same manner. It is a ticking conscience.
Our booklet tells—Complete system, $36.00.

Hardinge Bros., Inc., 1760 Berteau Ave., Chicago
Approved and Labeled by National Board of Fire Underwriters

THE EAGLE DRY PAN



Write for Prices
EAGLE IRON WORKS DES MOINES, IOWA

Link-Belt Silent Chain
The modern method of transmitting power
from prime mover to machine, or from line shaft to counter shaft. It shows the highest sustained efficiency of all mediums for the transmission of power (98.2% on actual test). It is as flexible as a belt—as positive as a gear and is more efficient than either.
Write for Silent Chain Data Book No. 125 or send for a Link-Belt Service Man



LINK-BELT COMPANY
Philadelphia Chicago
Indianapolis

Porto Rico and Latin-America
MAILING LISTS
A TRADE DISCOVERY!!! It pays to use them freely. Here is what one of our customers says: *"Mailed fifty letters to Porto Rico and got* 45 *replies, of which* 37 *resulted in sales. Mailed one hundred same letters to prospects here in the U. S. and received about* 13 *replies and No sale!!! You have a TRADE DISCOVERY, indeed."* Ask for particulars and our list containing hundreds of different classifications of Porto Rico and Latin-America mailing lists. Specify your wants, please.
THE MAIL ORDER CO. Box 148
San German, Porto Rico
Reference: Bank de Economias, San German K-45

used in Chicago, which comes, for the most part, from New Hampshire. It brings a fancy price on account of the high freight rate, a recent residence job, taking upwards of 100,000, having been sold at $30 per thousand delivered at the building.

The Chicago Retort and Fire Brick Company has issued a new catalog, which, in addition to showing the standard shapes adopted by the Refractories Manufacturers' Association, gives a live fund of diversified information that will be of value to superintendents and others connected with clayworking plants.

Conditions in the face-brick business in Chicago are far from bright. The prolonged dullness in the building trade, due, in the earlier months, to a bad money market, have been continued by a bitter strike that has been in progress since May 1. This, or some other circumstance, has brought about a price war in the face-brick trade, which has a very serious aspect for the concerns that handle this material in the "I Will" city.

The petition of the Center township, Marshall county (Ill.), freeholders for a system of roads, filed with the county commissions, was not acted upon by the county board at its recent meeting. Gravel has been used for the improvement of the Michigan Road in that township, and it was thought best to give the property owners an opportunity to change the type of pavement in the new roads. It is more than probable that brick will be used for this work.

Five Belleville (Ill.) brick and tile plants and one at Mascoutah, Ill., have merged interests and formed the Belleville Brick & Tile Company with a capital stock of $500,000, for which articles have been applied at the office of the state secretary. The new combination includes the Belleville Brick Company, the Ittner Brick Company and the National Brick Company, all of which will now be under the same management. The five plants at Belleville will continue to operate without change, but to the brick plant at Mascoutah, Ill., will be added a tile-making plant. Warren W. Ittner, one of the incorporators of the new company, states that the principal reason for the merger was to effect a saving in superintendence and sales cost. The new company will employ about 1,000 men.

INDIANA

Douglas F. Stevens, of the Acme Brick Company, Cayuga, Ind., says that his company at this time is ahead of last year in output, lacking near a million brick of having the stock on hand that it had one year ago.

The clayworking plants at Brazil, Ind., report that despite unfavorable business conditions, April and May business has been the largest in several years. Practically all the Brazil plants are running at full capacity.

The Vincennes Shale Brick Company, Vincennes, Ind., is selling $40,000 worth of preferred stock in order to open a new clay pit and begin the manufacture of high grade face-brick.

In Evansville, Ind., preference has been given in building the new Citizens' National Bank Building, at Fourth and Main streets, to local supply men. The G. A. Fuller Company, of New York, has the general contract and most of the sub-contracts let to date, have gone to Evansville concerns. The Indiana Builders' Supply Company will furnish the terra cotta and the Standard Brick Company

STRENGTH UNIFORMITY DURABILITY
REG. U.S. PAT. OFF.

Webb Wire Wear Wells

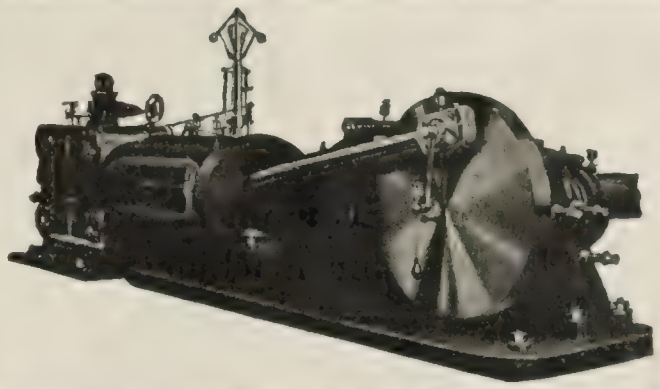
Our
"Red Label" Piano Wire
is made especially for Brick and Tile Cutting

All our Steel is made especially for us in Sweden, and we temper and draw the wire to withstand abrasion. It is strong, durable and uniform. You can buy it either in coils or in looped lengths. Our loops are twisted and wrapped, then soldered, which gives the maximum strength of eye.

Ask for Sample and Prices

THE WEBB WIRE WORKS
New Brunswick, N. J.

POWER PLANTS COMPLETE
CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



Send for Catalogue No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870 BURLINGTON, IOWA



Davenport Locomotive Works,
Davenport, Iowa

Tycos **PYROMETERS**

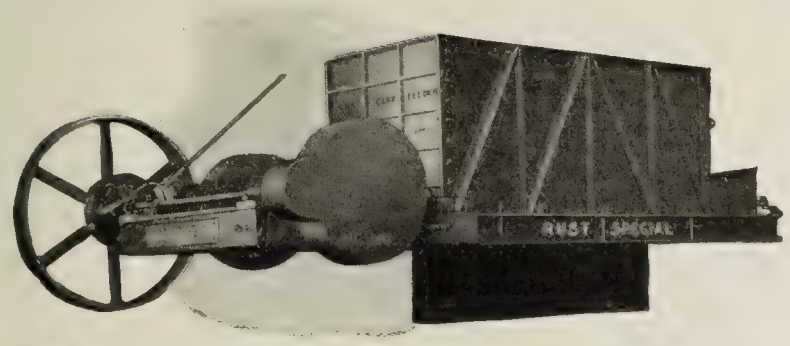
Practical
—
Dependable
—
Guaranteed



Ask for these Books

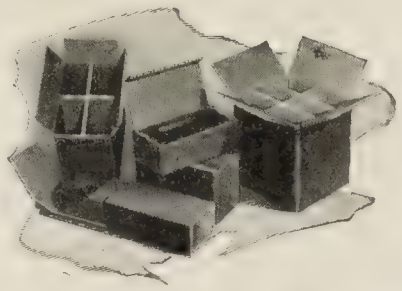
Taylor-Cambridge Division
Taylor Instrument Companies
ROCHESTER, N. Y.

Use the RUST SPECIAL CLAY FEEDER For EFFICIENCY and ECONOMY. Write for our Catalog of other labor and money saving equipment.



Marion Machine, Foundry & Supply Co.
Box 395, MARION, IND.

IT IS DONE SO EASILY



Examine the illustration and see how convenient we have made it for you when sending out samples—and yet how thoroughly the corners and edges are protected from chipping.

The condition in which your brick arrive may decide whether or not you get that order. In spite of the *superiority* of Hinde-Dauch containers they *cost less* than wooden ones.

The Hinde & Dauch Paper Co., Sandusky, Ohio
Made in all sizes for all purposes

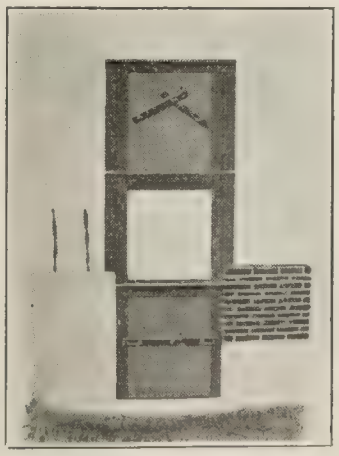
ZOOK
SILO FRONT

It excels in simplicity of construction and operative efficiency. Built of structural steel; no special machinery nor skilled labor required.

It will be to your advantage to add this silo front to your line.

I will sell you the right to manufacture and market it in certain territory, or will manufacture and supply your needs.

Write today for particulars.



G. W. ZOOK
BUFFALO KANSAS

Fire Insurance Premiums are a part of your "Overhead"

¶ If you can reduce them, you lower your "fixed cost."
¶ If, in reducing them you also make your plant safer, you have a double profit.

Insure Against Fire When You Insure Against Fire Loss. It is Better Not to Have a Fire Than to Collect on a Fire Insurance Policy.

¶ Consult us on fire-insurance matters; we can show you where money can be saved that is now wasted in paying larger premiums than are necessary. If you place your insurance through us, this advice is given you without charge.

Anyway—it will not cost you much to write

GARDNER READ and E. WINFIELD DAY

"NUGGET"

Bearing Metal

Guaranteed most **Economical** and **Efficient** for clay working machinery.

Its hardness assures great wear resistance.

Its high compressive strength enables it to withstand heavy duty.

Why not let us prove it?

15 cents per pound, delivered.

Manufactured Solely by

The Cleveland Alloys Co.

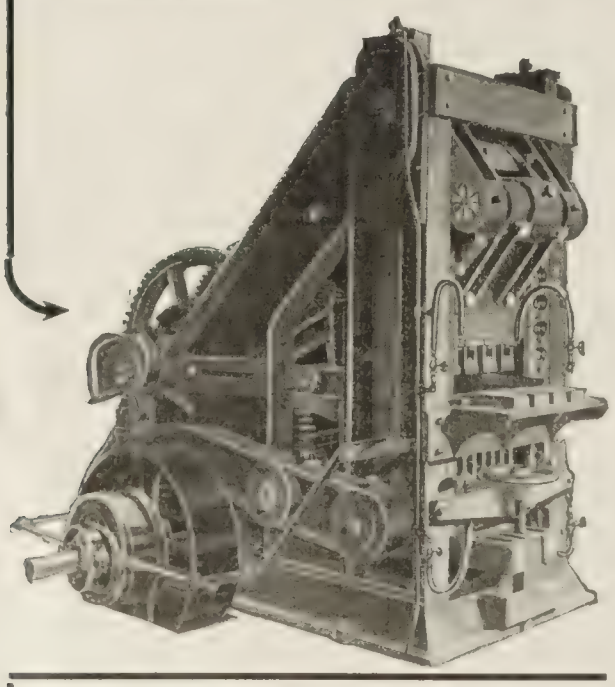
Bearing Metal Experts

CLEVELAND - - - OHIO

FITS YOUR LADLES

34,000 dry-press brick per day on a single four-mold machine—that's what is being done on the

GRATH PATENT PEERLESS BRICK PRESS



If you have dry, or semi-dry clay or shale, you will make better brick at lower cost on the GRATH. Gives full pressure without any rebound.

Let us send you photos and description.

Our catalog illustrates a complete line of Brick and Roofing Tile machinery—we'll gladly send you a copy.

ILLINOIS SUPPLY AND CONSTRUCTION CO.

CENTURY BLDG. ST. LOUIS, MO.

will furnish both the face-brick and the common-brick. This is to be a ten-story building.

KANSAS

Through a typographical error the item that was published in these columns in the June 1 issue, relative to a shipment of brick that had been made by the Kansas Buff Brick and Manufacturing Company for the Coco-Cola building was made to read 2,000. Multiply this amount by ten and you have the amount which should have been printed.

KENTUCKY

The Warren County School Board, Bowling Green, Ky., has let the contract for a two-story brick veneered school building at Woodburn, Ky., to cost $5,000, to J. C. McMillan, of Franklin, Ky.

At Lewisburg, Ky., a new brick making plant has been established, with V. L. Price as president, and J. O. Reynolds secretary. The capacity of the company's kiln is 100,000 brick.

The Tyler Building Supply Company, Louisville, Ky., is delivering on work now under way, shipments at present breaking all records. Deliveries have been begun on the Ford Motors Company building and the Kellar apartments.

In spite of the fact that the Louisville (Ky.) building situation is below normal in volume, the brick manufacturers and dealers find themselves able to keep going with numerous small jobs. The manufacturers have closed various contracts with out-of-town builders and are delivering in limited quantities to smaller jobs which are under way in Louisville.

The Louisville Pottery Company is working steadily and looks forward to a satisfactory volume of business for June. April and May closed in excellent shape and capacity business is still the rule. All conditions point to satisfactory sales for the remainder of the year. A most promising fruit crop would seem to justify a good prospective demand for crocks.

The heavy rains of the past several weeks have stimulated an interest in drain tile, and as a result numerous inquiries are being made of A. P. McDonald, sales manager of the P. Bannon Pipe Company. There has been a good deal of washing in some quarters and inquiries have been made as to using vitrified tile to check erosion. Shipments to rural districts continue good, according to Mr. McDonald, and there is some good business in sight.

Business continues good with the Coral Ridge Clay Products Company, Louisville, Ky., according to George H. Fiedler, general manager, who said that he felt the company was getting its share of the demand that is in evidence. Deliveries are continuing regularly on several jobs which are under construction. Mr. Fiedler, general manager of the company, has been proposed as a member of the Louisville Rotary Club.

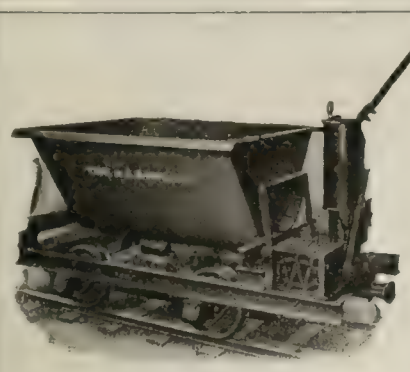
MASSACHUSETTS

The Diamond Brick Company, Worcester, Mass., has been incorporated by Axel Olanson, Harry C. Oberist and Carl H. L. Bock, with a capital of $50,000.

MICHIGAN

The Michigan Face Brick Company, of Grand Rapids, Mich., occupies handsome quarters in the Michigan Trust Building in that city, and is arranging an effective exhibit of face-brick in the show rooms adjoining its offices.

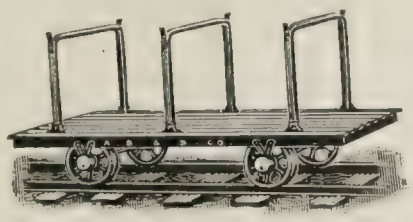
The Croswell Brick Company, of Croswell, Mich.,



No. 217-E. Side Dump Car Equipped with Motor

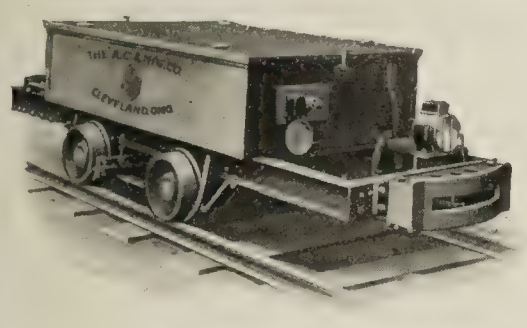
REDUCE YOUR HANDLING COSTS

By the Purchase of Efficient Equipment



No. 126 Double Deck Dryer Car

ATLAS
High Efficiency
Cars and
Electric Locomotives



Storage Battery Locomotive for general use.

will meet your requirements. Let us send you catalogue and quote prices.

THE ATLAS CAR & MFG. CO.

Dept. I

1287 Marquette Road, Cleveland, Ohio

A Proportioning Device that protects you against spoiled ware



This machine is designed to operate and produce an even uniform batch, from any number of desired materials.

It measures, mixes and pugs at a given rate. It is therefore an asset of worth to the dry house foreman and to the burner. Both know always the nature of the ware and are able to direct their efforts intelligently.

It will be worth your while to investigate—if you mix two or more materials

A. L. Schultz & Son

1675 Elston Avenue

Chicago Illinois



The Improved Hook Patent Up and Down Draft Kiln, Sullivan, Ind.

Be Sure You Get the Improved Hook Patent Up and Down Draft Kiln

Sold Only by **The Ohio Kiln Co., Vigo, Ohio**

THE CLIMAX OF KILN CONSTRUCTION

30 ft. kilns of brick were burned in 82 hours, including water-smoking period, and no under-burned or over-burned ware.
30 ft. kilns of drain tile were burned in 55 hours from start to finish and all courses burned uniformly; smaller kilns in proportionately less time.

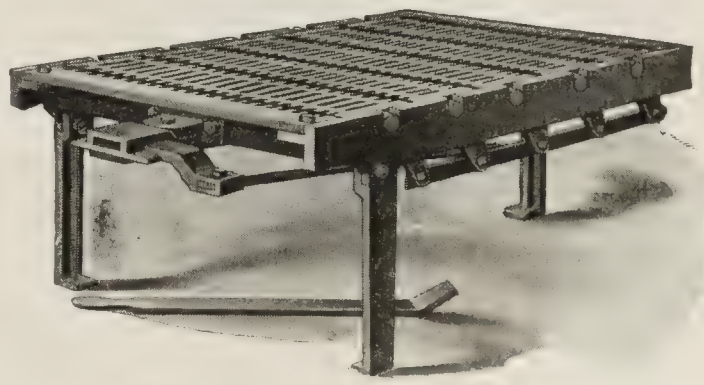
Direct heat applied at bottom and top of ware gives uniform temperature in all parts of the kiln. It reduces the fuel consumption to the minimum, lessens the time required to turn a kiln, and increases the output of first grade ware.

Can be installed in any kiln; round, rectangular; old or new, at moderate cost.

We Do What We Advertise. Write for Information.

Samples of your clay will be tested in our kilns free of charge under Mr. Hook's supervision.

THE CANTON KILN GRATE



FOR THE PLANT THAT COUNTS THE COST

It enables that plant to buy fewer carloads of coal, and to pay less for the carloads that it does buy. For—the Canton Kiln Grate burns less coal; it does it thoroughly and economically, and it can burn a low grade of coal—to accomplish the same results that you are getting (or want to get) now.

Bulletin B contains complete information on use of grate in kilns.

THE CANTON GRATE CO.

1706 Woodland Ave., CANTON, OHIO



Gasoline Locomotive for Bach Brick Co.

Baldwin Gasoline Locomotives

are specially suitable for light switching service in and about brick-yards. They consume no fuel while standing, and are easily handled by one operator. A Baldwin gasoline locomotive has made a record of one year's service with a cost for repairs of less than $5.00.

A copy of Record No. 74, which contains further particulars, will be furnished on request.

The Baldwin Locomotive Works

Philadelphia, Pa., U. S. A.

Represented by

F. W. Weston, 50 Church Street, New York, N. Y.
Charles Riddell, 625 Railway Exchange, Chicago, Ill.
C. H. Peterson, 1610 Wright Building, St. Louis, Mo.
George F. Jones, 407 Travelers Building, Richmond, Va.
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.
Williams, Dimond & Co., 310 Sansome St., San Francisco, Cal.



We Can Help You Perfect Your Organization:

Eliminate Losses

In time, labor and material.

Decrease Costs

Increase—

Wages
Production
Sales
Profits

Create SATISFACTION of Executive and Employee.

A "heart to heart" talk will convince you.

L. V. Estes, Incorporated

Engineers

McCormick Bldg. Chicago

changed its corporate name to the Croswell Brick and Tile Company, Ltd.

A considerable portion of the business section of Redford, Mich., a short distance from Detroit, was destroyed by fire on June 8. Solid brick structures in the burned district prevented the fire's leveling a much greater area. None of the brick buildings were seriously damaged.

The United Fuel and Supply Company, Free Press Building, Detroit, Mich., announces the organization of a new department, which will handle face-brick. Heretofore the company dealt in common-brick only, handling the entire output of F. H. Wolf & Brother. The new department will be under the direction of Harry A. Walters, a well known figure in the face-brick field, having formerly been the manager of the Chicago office of the Hydraulic-Press Brick Company, and at one time general manager of the Washington office of the same corporation.

MINNESOTA

The Enterprise Brick Company, Wrenshall, Minn., is getting its plant in shape to resume operations at a very early date.

MISSOURI

The work of selling about $700,000 worth of bonds voted for by Kansas City, Mo., recently, has begun. A goodly portion of this money is to be spent for the construction of sewers and brick pavements.

The fire-clay department of the Mississippi Glass Company, of St. Louis, Mo., has been incorporated as the Walsh Fire Clay Company, the personnel of the directors, officers and representatives remaining unchanged. The various Walsh brands of fire-brick, special shapes and glass-house blocks will be manufactured with all of their old-time excellence.

At a recent meeting of the Engineers' Club of Kansas City, Mo., Professor James F. Tucker, of the University of Oklahoma, was the principal speaker. Prof. Tucker has made a special study of paving matters and was formerly engaged in lecturing on paving brick. Benjamin Brooks, a representative of the International Clay Products Bureau, was also on the program. He made a brief talk in which he urged the development of the Blue River.

NEW HAMPSHIRE

The Lancaster Brick Company, of Lancaster, N. H., has just closed a contract to supply material for a new school building to be erected at North Stratford, N. H. About a quarter of a million brick will be required. The Lancaster Company also has several other orders in hand and there is every prospect for a busy season at the plant.

The Spiers-Fish Brick Company, 79 Milk Street, Boston, Mass., lit its first kiln of the season on May 18 preparatory to filling a large order for brick to be used in Salem, Mass., where many brick structures are replacing wooden buildings destroyed in the fire of a year ago. This company has recently installed new machinery and the plant now has a capacity of 80,000 brick daily.

NEW JERSEY

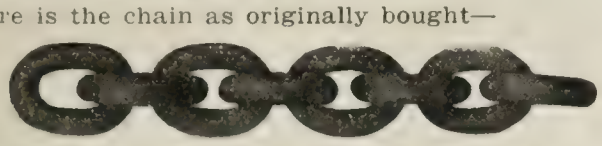
The School Commission, of Trenton, N. J., recently adopted the recommendation of the Grounds and Building Committees that terra-cotta be used in the construction of the Junior School, instead of cut stone. It was stated that this action would result in a saving of about $6,000 in the cost of the building.

Brick manufacturers throughout the state of New Jersey and eastern Pennsylvania have been expressing their regrets over the death of C. W. Kilborn, a well-known

"The Woodhouse" Special Chain for Steam Shovels

LOOK AT THESE ILLUSTRATIONS and you'll instantly see why you will forget your chain troubles when you adopt the "WOODHOUSE."

Here is the chain as originally bought—



And here's the exact same links after 16 months of continuous service in heavy dredging.



Isn't this good evidence of the strength and durability of "Woodhouse" Chains, and why you should adopt our chains?

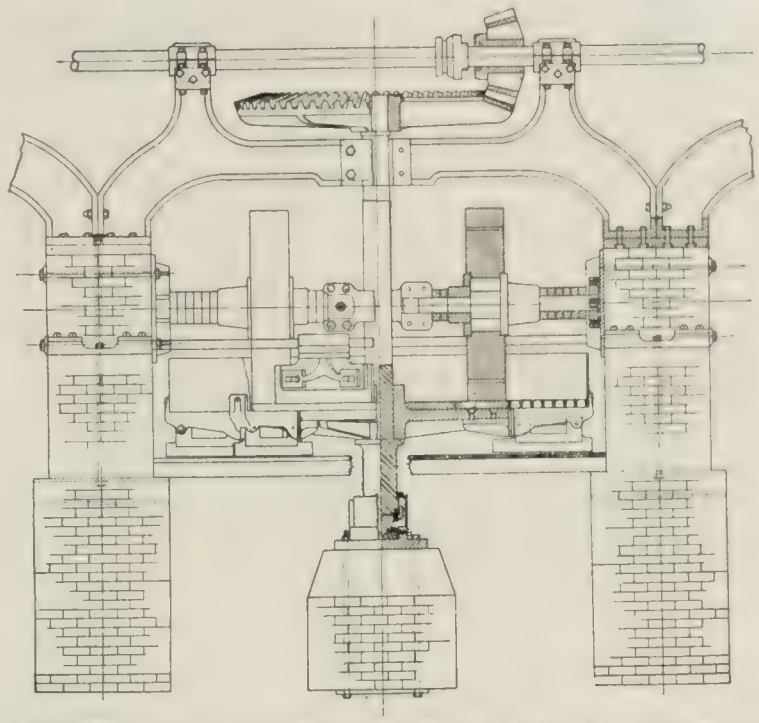
For these hand-made chains we use a special iron that must conform to a severe test—selected pure pig-iron, treble-worked and re-rolled.

Get our catalog and prices—also let us send you a book of testimonials that will convince you.

WOODHOUSE CHAIN WORKS

Trenton, New Jersey

The "Means" Standard 10-Foot Dry Pan



¶ We can refer you to brick makers who have been using the "Means" Dry Pan for over ten years constantly, where the "Step" and "Toe" have never had to be replaced.

¶ Let us send you drawings and detail description that will help you to understand why "Means" pans give such remarkable service.

¶ We also make 8 and 9-foot pans and a complete line of clayworking machinery and repair parts.

The Toronto Foundry & Machine Co.

Toronto, Ohio

We Make Those Famous "INVINCIBLE" Brick Barrows

THE COAST LINE TO **MACKINAC**

DETROIT, CLEVELAND, BUFFALO, NIAGARA FALLS. | TOLEDO, PT. HURON, ALPENA, ST. IGNACE.

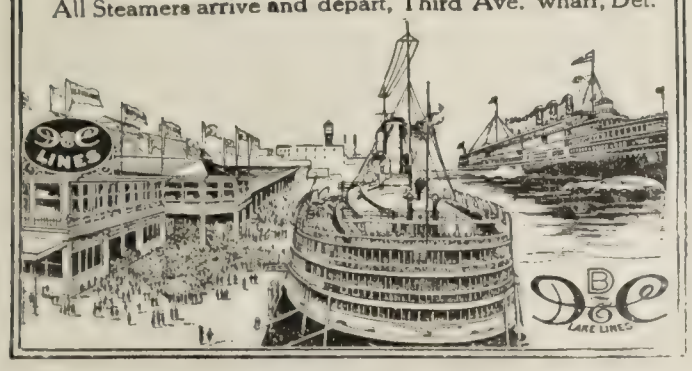
A LAKE TRIP FOR REST AND RECREATION

Have a real vacation on the Great Lakes, the most enjoyable and economical outing in America. The cool lake breezes, the ever-changing scenes along the shore, and the luxurious steamers of the D. & C. Line are positive guarantees that you will enjoy every minute of your trip, and return home refreshed and glad you went. Daily service between Detroit and Cleveland and Detroit and Buffalo. Four trips weekly from Toledo and Detroit to Mackinac Island and way ports. Two trips weekly, special steamer, Cleveland to Mackinac Island, no stops enroute except Detroit and Alpena. Special day trips between Detroit and Cleveland during July and August. Daily service between Toledo and Put-in-Bay. RAILROAD TICKETS AVAILABLE FOR TRANSPORTATION on D. & C. Steamers between Detroit and Buffalo or Detroit and Cleveland either direction. Send two-cent stamp for illustrated pamphlet and Great Lakes map. Address L. G. Lewis, G.P.A., Detroit, Mich.

Detroit & Cleveland Navigation Company

Philip H. McMillan, Pres., A. A. Schantz, V.P. & G.M.

All Steamers arrive and depart, Third Ave. wharf, Det.



LEHIGH PORTLAND CEMENT CO. **LEHIGH** ALLENTOWN, PA. – CHICAGO, ILL.

Paving Contractors

who use Lehigh Cement for base, filler and grout on all brick paving work

Know Exactly What the Results Will Be

They know that a given proportion will give uniform results in every part of the work and that there need be no guessing as to strength, or uniformity or fineness. Prompt deliveries always.

LEHIGH CEMENT



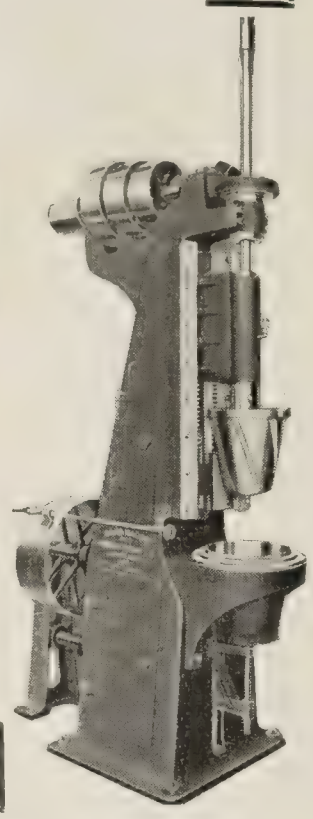
Flower Pots—
A Profitable Bi-Product

No matter what the nature of your clayworking plant, it is no doubt possible for you to add Flower Pot manufacturing with very little additional outlay.

Often you wish you had some way to keep Jim Smith or Jack Jones busy all the time, don't you? Well, here's the solution: put in a

Baird

Flower Pot Machine



Easy to operate, absolutely accurate. Makes any regular size pot desired.

Send us a sample of your clay and let us show you what our machine will do.

Baird
Machine & Mfg. Co.
54-56 Jefferson Ave.
Detroit, Mich.

TILEMAKERS

CAN LARGELY INCREASE THEIR SALES . . . . .

By distributing to farmers and others interested in Drainage the pamphlet entitled

HINTS ON FARM DRAINAGE

PRICES

100 copies	$ 3.00
200 copies	5.00
300 copies	7.00
500 copies	12.00
1000 copies	17.00

On orders of 500 or more the name and address of purchaser will be printed free on the outside cover. Address

Kenfield-Leach Company
CHICAGO.

SEND FOR SAMPLE.

brick manufacturer of Vineland, N. J. Mr. Kilborn was eighty-one years of age and had been in the brick business the greater part of his life, having conducted an establishment on the outskirts of Vineland up until several years ago when his increasing years forced him to retire from active participation in the business.

Much unfavorable comment has recently been current in manufacturing circles in Trenton, over the announcement that the specifications for the new Junior High School call for unglazed Flemish tile. Herman C. Mueller, president of the School Commission, and also head of the Mueller Mosaic Company, the only Trenton concern manufacturing this sort of tile, threatens to resign his commission as a result of the charges of other Trenton manufacturers that the specifications have been unduly influenced.

On account of the demand by inspectors that many improvements and alterations be made to their plant, in order to care for the health and welfare of their employees, the management of the Anchor Pottery, New York avenue, Trenton, N. J., recently announced that the plant will close down on or about the first of July. They stated that, on account of the exceedingly dull times which have been prevalent at the pottery for some time past, it would be impossible for them to comply with the requests of the inspectors.

The Electrical Porcelain Finishers' Local No. 267, of Trenton, recently elected the following officers: President, Catherine McCoy; vice-president, Minnie Anglina; financial secretary, Catherine Mooney; recording secretary, Hellen Malloy; treasurer, Nell Connell; business agent, Joseph Plummeri; sergeant-at-arms, Helen McCoy; trustees, Nellie Murphy, Margaret Lyons, Gertrude Toft: delegates to the Central Labor Union, Catherine Mooney, Catherine McCoy and Nellie Connell. The meeting was held in the Ribsam building and was largely attended. Mr. Plummeri gave a most interesting address to the members of the union.

NEW YORK

At its annual meeting recently, the Ostrander Fire Brick Company, Troy, N. Y., elected as directors, F. A. Ostrander, J. K. P. Pine, C. N. Flack, J. W. E. Podmore and R. Rynders, Jr.

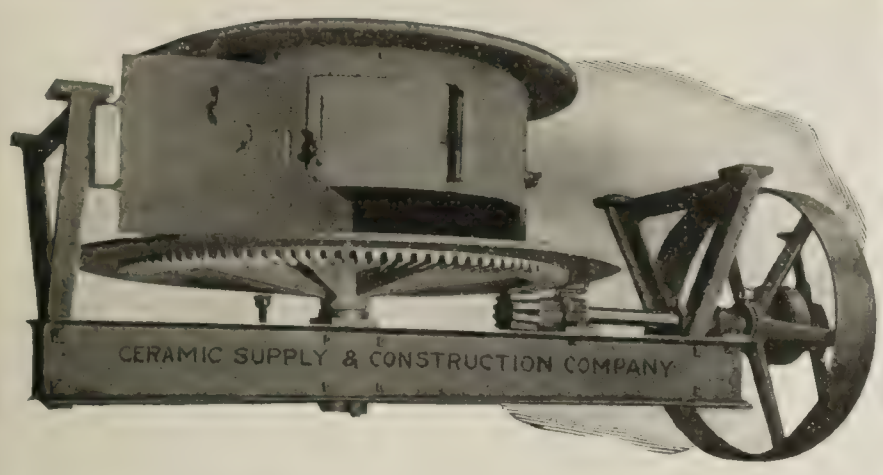
The Whippany Clay Products Company, Whippany, N. J., has been incorporated with a capital stock of $125,000, to manufacture and deal in clay products. The incorporators are Frederick E. Hankins, James D. Avery, Jr., and Harvey Winters.

Supervisor Charles D. Millard has announced that New York State will pave Tarrytown Road with brick this summer from White Plains to Tarrytown. The work will cost about $300,000 and will be started at the earliest possible moment.

Plans are now being made by the Champlain Brick Company, Mechanicville, N. Y., to rebuild its plant which was destroyed by fire during the latter part of May. The insurance adjusters have settled with the company on a basis of total loss, and a gang of men has been put to work cleaning away the debris in preparation for rebuilding at once. The company expects to begin partial operation within thirty days to fill orders now on its books calling for a large number of brick.

OHIO

The New Lexington Clay Manufacturing Company, Columbus, Ohio, has been incorporated with a capital stock



"Bolt It to the Bin"

The Columbus Feeder

for automatically feeding

Crushed Clay to Dry Pans *and* Pulverized Clay to Pug Mills

is fast coming into general use. There's a reason. Let us show you—furnish the machine on trial.

Send for Circular.

Ceramic Supply & Construction Co.

Columbus, Ohio

DURO

Everlasting Clay Block Silos



will increase your sales and profits

Easy to Make Easy to Sell

The Door-Frame Construction is a Marvel

It makes the silo such a solid piece of masonry that it is practically everlasting and indestructible.
We will furnish all the parts, except the blocks, for a very nominal sum, or will sell the right to use our patented device for small royalty. Address at once.

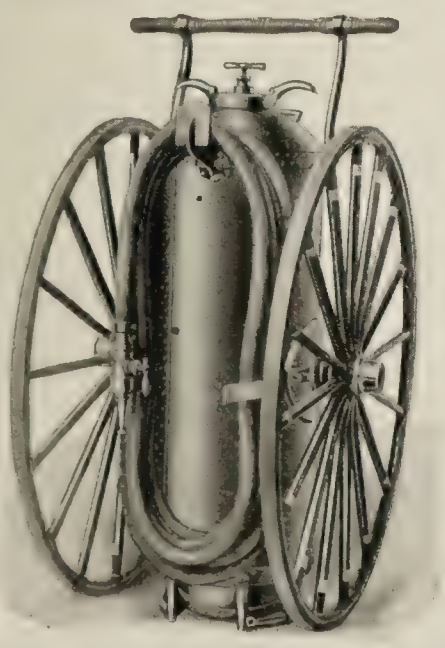
Mowrystown Brick & Tile Co.

Mowrystown, Ohio

FIRE PROTECTION ON APPROVAL



We will ship chemical engines on approval, subject to test and inspection. If unsatisfactory in any way, they can be returned transportation collect.



We manufacture a complete line of chemical fire apparatus.

Catalogue on Request

O. J. CHILDS CO.

40 Liberty St.

UTICA, N. Y.

To Prevent Scum Appearing on Your Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For Clay Industries

The Roessler & Hasslacher Chemical Company

100 William Street, New York

Let The Burner Have A Thwing



Indicating Pyrometer in his shed connected by a dial switch to one or more Thermo-couples in each kiln.

Then he will not need to be making excuses for poor firing and poorer product. With a knowledge of the temperature before him, he can control his firing and produce better ware with less fuel.

Write for Bulletin No. 7

Thwing Instrument Company

437 N. Fifth Street, Philadelphia, Pa.



$2.50 Per Day
A pleasant room with private bath, facing large open court. (Not one room, but one hundred of them.)

$3.00 Per Day
An excellent room, with private bath, facing Street. Southern exposure. (Not one room, but eighty-seven of them.)

Also attractive Room without Bath for **$1.50** per day. The Restaurant prices are most moderate.

Make Your Dollar Produce More in a New York City Hotel

Location

One minute from 5 of the largest department stores. Five minutes' walk from 19 principal theatres. Within a block of the Fifth Avenue shopping district. Every line of transportation passes the door. Fifth Avenue Bus lines and principal surface lines. The Hudson Tubes across the street. Elevated Railroad Station across the street. Subway Station three minutes away. Grand Central Station within seven minutes. Pennsylvania Railroad Station just one block away.
For convenience one could ask no more.

The Hotel—600 Rooms, 400 Baths

EVERYTHING NEW AND MODERN. A FIVE MILLION DOLLAR HOTEL EQUIPPED TO SATISFY THE MOST EXACTING TASTE.

All Baggage Transferred Free to and from Pennsylvania Station.

THE HOTEL MARTINIQUE

On Broadway, 32nd to 33rd Streets, NEW YORK

Charles Leigh Taylor, President — Walter Chandler, Jr., Manager
Walter S. Gilson, Vice-President

of $75,000 by Daniel McKeever, J. L. Stanton and T. B. Hogan.

The Dover Fire Brick Company, Strasburg, Ohio, has been incorporated with a capital stock of from $100,000 to $250,000.

John A. Anders, president of the Anders Shale Brick Company, of Cincinnati, Ohio, reports that the company is installing a dry pan and that, with other improvements contemplated, the desired daily capacity of 30,000 hollow and common brick will be reached shortly. At present the plant is turning out from 15,000 to 20,000 brick a day, and is finding a ready sale for this amount.

The Metropolitan Brick Company, of Canton, Ohio, is having prepared several large pictures of each of its plants which are to be forwarded to the Panama-Pacific International Exposition, where they will be hung in the Canton exhibit. Several other firms of that city have also been requested by the Canton Chamber of Commerce to send pictures of their factories to the Exposition.

The way Ohio roads and streets are using up paving brick is indicated by the fact that the Moores-Coney Company, which handles the output of the Harris Brick Company, of Zanesville, Ohio, reports the plant sold out to capacity up to September 1. F. L. Moores states that his company has been fortunate in securing a number of good orders in the immediate vicinity of the plant, as well as elsewhere.

Word has been received from Canton, Ohio, that A. W. Aylesworth, one of the Bonnot Company's representatives, died suddenly, June 8. Mr. Aylesworth was a familiar figure in the clayworking field, and the news of his passing will come as a shock to a host of friends. He was a man of winning personality, and of considerable literary attainments, it being a matter of memory that he served as "Brick and Clay Record's" European correspondent, early in 1912, at which time he made a round of the clay plants on the other side of the water.

The American Fire Clay and Products Company, Cleveland, Ohio, has been incorporated with a capital stock of $1,000,000 by Max P. Goodman, A. L. Dietz, M. E. Tettelbach, Joseph S. Backowski and Alfred Safran. The company, it is planned, will own and control a number of brick, tile and glass plants, and to this end has secured options on clay and coal lands, and on sand banks. Options on several plants now running have also been obtained. These are to be continued in operation and additional plants built when the company gets ready for business.

By January 1 next the capacity of the Burton-Townsend Brick Company of Zanesville, Ohio, will have been doubled by the addition of new equipment to cost $500,000. The output of the present plant has been sold out for several months to come. With natural resources that are said to be unequaled, together with a coal mining property south of Zanesville, that furnishes more coal than necessary for the operation of the plants, officials are pleased at the prospects. The earnings for the last quarter, according to reports, have been the largest in the history of the company.

A spectacular fire, involving a loss of about $50,000 for the National Enameling & Manufacturing Company, of Youngstown, Ohio, occurred recently, the company's entire plant being endangered by the blaze. The fire started in the conduit department and spread rapidly, an explosion in a tank of enameling fluid helping to scatter the flames. William Wilkoff, one of the principal owners of the plant,



Type B—¾ cu. yd. Erie Shovel.

The object:

To Build a Better Shovel

We know just as well as you know that it would be to no good purpose to put another shovel on the market and have it merely "just as good." To justify its existence it had to be better.

And the ERIE Shovel is better—in many ways.

All we want to do is to get you to say: "Well, I am going to investigate the ERIE." The opportunity to show you how and why the Erie is the "better" shovel you have been looking for is all we ask. Catalog A gives the facts and figures—where shall we send your copy?

BALL ENGINE CO., - Erie, Pa.

Valley Brick Company Plant for Sale at Public Auction

June 26, 1915

At Charles-Town, W. Va.

A Modern Brick Making Plant, consisting of about 15½ acres of land, Brick making Machinery (Freese), Dry-House, Five Permanent Kilns, Etc.

The Plant is located in Ranson, a suburb of Charles-Town, Jefferson County, West Virginia, and is connected with B. & O. and N. & W. Railroads by belt line and switch.

For terms, photographs and further description of Plant, address

H. V. SHEETZ, *Trustee*
Charles-Town, Jefferson County, W. Va.

The Hook System of Burning Clay Products
is an application of Uncommon Common Sense



At the Plant of the Vigo Brick & Tile Co., Vigo, Ohio.
Burning Time for Standard Brick in these Kilns, 77 hrs.

Before using Uncommon Common Sense the shortest time that a kiln could be burned was 7 days and 7 nights, or 168 hours.

After using Uncommon Common Sense and installing The Hook System, the time was reduced to 77 hours, a temperature of 1850 degrees was reached, with an average consumption of 727 lbs. of coal per 1,000 standard brick. This in spite of the fact that brick are set wet, due to inadequate drying facilities.

The system here also burns drain tile in **less than** 30 hours, with 6 tons of coal. Both of the above instances include the **watersmoking period.**

We Believe In It

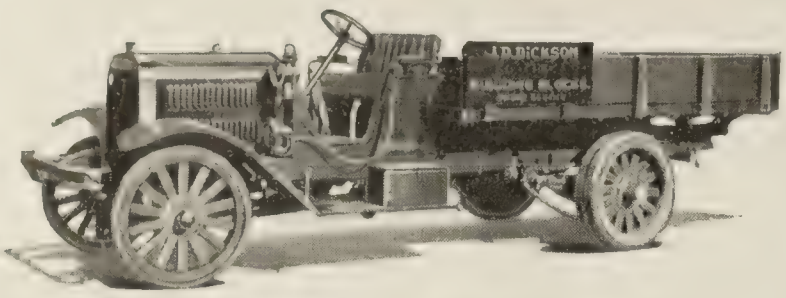
We will prove that it will save time and dollars for you; that it increases your present kiln capacity by 50 per cent.

Hook Patent Kiln Co.

Main Office: Vigo, Ohio.

Canadian Office: 250 Dufferin Street, Toronto, Ont.

KisselKar Trucks Always on the Job



KISSELKAR TRUCKS are invariably spoken of by drivers and garage men as the best trucks they know.

And it's true that a KisselKar Truck is of better material, better built, better balanced than the average truck. It is a staunch, powerful, dependable, scientifically constructed vehicle—**one that is always on the job.**

KisselKar Trucks are furnished in six sizes and with bodies to suit any business or special requirement. The loading capacities are 1500 lbs., 1, 1½, 2, 2½, 3½ and 6 tons, respectively.

KISSELKAR TRUCKS

In Six Sizes

Intelligent care is exercised by the Kissel Motor Car Company to furnish the **exact** truck needed by a customer.

Individual conditions, as well as those common to the line of business to be served, are minutely considered and advice given accordingly.

Write fully regarding your haulage problem—the mileage, the loads, the nature of cargo, the condition of roads, the number of stops, your present haulage equipment and all other facts that bear. **And don't fail to ask for our illustrated portfolio.**

Kissel Motor Car Co., 568 Kissel Avenue, Hartford, Wis.

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Cincinnati, Pittsburgh, Cleveland, Detroit, San Francisco, Los Angeles, Seattle, Buffalo, Rochester, Columbus and 300 other principal points.

has estimated the value of the building at $15,000, with contents at $35,000. Loss on the building is fixed at about $12,000, with insurance of $9,000, while insurance on the contents amounts to $22,500. Plans for reconstruction will be arranged as soon as possible.

The fear that this season's building in Cincinnati was to be confined exclusively to small jobs, with one or two exceptions, has already been sufficiently dissipated by the courthouse, the new Duttenhofer building, the women's building at the University, the $300,000 Walnut Hills-Hyde Park high school, and others. Architects Elzner and Anderson also report that the plans for the new Y. M. C. A., a structure which will cost $400,000 or more, with its equipment, will soon be ready for the letting of contracts. The building is to be nine stories in height, of fireproof construction, and is of an Italian Renaissance design.

One more step toward the resumption of work on the new $2,500,000 courthouse in Cincinnati, Ohio, was taken recently, when the Hamilton County Court of Appeals decided that the judgment of the lower court, refusing an injunction against the consummation of the McCaul contract, should be affirmed. The court sustained the finding of the trial court to the effect that alternative bids were legal, as long as all bidders were apprised of the various alternatives on which bids would be received Charles F. Waltz, representing the building interests who are fighting the McCaul contract on behalf of local concerns, will make an effort to have the matter reviewed by the Supreme Court of Ohio, if possible.

The common-brick plant operated at Breton, Ohio, by the Shorey-Willis Brick and Supply Company, of Cincinnati, is proving to be a valuable asset to the company, as it has contracts on hand calling for the delivery of more than a million brick. Of this amount, 400,000 are to go to the Emory Candle Company warehouse, the remainder being distributed among smaller jobs. The capacity of the plant is in the neighborhood of 25,000 brick a day, so that it will be busy for some time to come with business on hand. Mr. Willis says that while the demand for face-brick, a full line of which is handled by the company, is not as active as usual, prospects are such that the season now opening up should be one of the best for several years.

PENNSYLVANIA

The Bloomsburg Brick Company, Bloomsburg, Pa., is to have a new superintendent. E. W. Meredith, formerly of Reynoldsville, Pa., has been chosen for this position, to fill the vacancy left by the resignation of W. F. Swengel.

At a recent meeting of the Manufacturers' Club, of Philadelphia, Cyrus Borgner, president of the Cyrus Borgner Fire Brick Company, Twenty-third and Race streets, was elected one of the vice-presidents.

George W. Keely, manager of the North Philadelphia Brick Works, Third and Luzerne streets, reports having recently ordered a new producer-gas plant in order to mitigate the nuisance caused by the smoke from the stacks.

A petition incorporating an appeal to the state highway department to use vitrified paving-brick instead of macadam in the reconstruction of the highway between Clearfield and Woodland, is being circulated throughout the district by the Clearfield Chamber of Commerce and is finding many signers.

The Equitable Brick Manufacturing Company, Limited,

CHICAGO BRICK MACHY CO.
UP TO DATE MACHINERY
CHICAGO, U.S.A.

Elwood Dry Press
Auger Brick Machines
Down Delivery Tile Mills
Oil Burning Equipment
Crude Oil Engines
Piano Wire Screens
Dry and Wet Pans
Soft Clay Brick Machines
Pug Mills
Wet and Dry Clay Disintegrators
Smooth and Conical Roll Crushers
Wood Moulds
Trucks and Barrows
Kiln Fittings

If you are in the market for any of the above we will be pleased to quote you.

Catalogs upon request

Chicago Brick Machinery Co.
20 W. Jackson Blvd. Chicago, Ill.

The Underwood Producer Gas Burning System

(Patented)

Is demonstrating daily its superiority over every other known method of burning clay products.

It does not except any kind of ware —burns all kinds from the finest to the coarsest with equal facility—does it perfectly.

It not only burns them better than can be done by any other known method but does it at a great saving—in time—in labor—in fuel consumption.

It elevates the plant from the class peculiar to this industry to the class of modern factories.

It gives the operators in charge of the burning a chance to work with their brain instead of brawn.

Doesn't this appeal to you as being just what you need and want?

You don't need to accept our statements for the above. Go to one of the many plants where it is operating daily and **see it for yourself.**

The Manufacturers Equipment Co.

Everything for the Clay Worker

Dayton - Ohio, U. S. A.

Western Agents: Geo. H. Smith
203 Sheidley Bldg., Kansas City, Mo.

Buy Heat Making Fuel

Not "Just Coal"

All that looks like coal is not always coal.

Slate, rock and various other non-heat producing minerals may be mixed with carbon—but they do not produce **heat.**

Yet you buy it—pay cash for it—when you buy "just coal."

Impure coal causes clinker and excess ash—increases the time of burning.

Impure coal costs ten times as much as pure coal.

Buy Long Flame Coal

It reaches the **bottom**—of your kilns.

If you burn paving brick, you are enabled to get No. 1 brick on the floor.

If you burn face brick, you can get beautifully flashed effects uniformly.

If you burn common brick or hollow ware, you can burn all hard—quickly.

Premium Coal burns hard and it burns to color.

Buy Premium Coal

It combines all the above features in one good coal—Price is reasonable—The quality is guaranteed—Try it and save money.

Big Creek Colliery Company

Peoples Gas Building

Chicago, Ill.

Galesburg, Ill. **Minneapolis, Minn.**

recently conveyed to Edward F. Gorman two lots, measuring 500x81.6 feet each, on both sides of Haverford avenue, between Fifty-eighth and Fifty-ninth streets. The property was later conveyed to William H. McCormick, and by him reconveyed to Mr. Gorman, subject to mortgages of $9,000. The properties are part of a tract of more than eleven acres, which is assessed at $160,000.

SOUTH DAKOTA

S. C. Reck, an experienced brickmaker who has been engaged in the manufacture of brick in Nebraska, Colorado and other western states, has been busy during the past six months equipping a plant for the manufacture of dry-pressed face-brick at Rapid City, S. D. The press that will be used will make two brick at once. The shale is brought in from a large bank to the grinder where it is pulverized, after which it is elevated into a revolving mixer, from which it is fed into the press. A twenty-five horsepower motor furnishes the power for all operations and the machinery in the plant is modern in every respect.

TENNESSEE

The Kingsport (Tenn.) Brick Company is now operating to capacity. In fact, it has been turning out a maximum number of brick daily all during the past year, in spite of a depression in building, and financial troubles in the South. The rough textured brick manufactured by this company is being used to face many of the large buildings now being erected in that part of the country.

TEXAS

The Acme Pressed Brick Company, Denton, Texas, has secured an order for 280,000 face-brick to be used in the three Cleburne school buildings, work on which is about to begin.

The directors of the Whiteselle Brick and Lumber Company, Corsicana, Texas, at a meeting recently, elected the following officers: J. E. Whiteselle, president; Max D. Almond, vice-president and general manager; J. L. Whiteselle, vice-president, and W. C. Oldham, secretary and treasurer.

Railroad Erects Large Sewer-Pipe Plant

Work has just begun on the building of a large sewer-pipe plant at Kingsport, Tenn., the project being backed by the controlling interests of the Carolina, Clinchfield and Ohio Railroad. The plant, when completed, will be one of the largest of its kind in the South, manufacturing sewer-pipe, drain tile, flue lining, wall coping, building blocks and fireproofing.

A large force of bricklayers and other workmen are now engaged in erecting the buildings for the new plant, which are to be located on a plot of ground adjoining the site of the Kingsport Brick Company. There will be a main building, 80 by 200 feet, three stories high, with a frontage along the tracks of the Carolina, Clinchfield and Ohio Railroad. The power house will be 50 by 60 feet, while the machinery rooms will be 52 by 75 feet and the clay storage shed 40 by 75 feet. The buildings will all be of a most substantial character, brick being largely used throughout. The machinery for the plant has already been built and it is expected that the new industry will be in operation within sixty days.

The raw material to be used has been tested and pronounced excellent. About twenty miles of drain tile made from this clay have been laid on the Kingsport Farms, Inc.

Marion
REVOLVING SHOVELS

WHEN a brick-maker puts a Marion to work taking out his clay, *his costs of operation go right down, and the quality of his brick goes up.*

The clay can almost always be taken out without blasting, and, through the efficient mixing of the various strata between the bottom of the cut and the top of the ground, can be made ready with comparatively little grinding.

Marions not Only "Pay Their Board" but Help You Produce More Uniform Brick at Less Cost

We'll welcome an opportunity to show you just how and why this is true—for it IS true beyond any question. We have put our whole experience into the building of Shovels that will do this work in a thorough, efficient way, proving themselves "good producers" from *your* standpoint.

A great many of the progressive brick manufacturers of the country are purchasing Marions—because *there is a line of Marion Shovels built expressly for clay-digging and other extra-heavy work.*

Details are fully explained in our interesting booklet "Digging and Mixing Clay—One Operation" which we shall be very glad to send you on request for Catalog 921.

The Marion Steam Shovel Company,
Established 1884
STATION A MARION, OHIO
Atlanta Chicago New York San Francisco Seattle
Manufacturers of Excavating Machinery of Every Description.



4

More Belting Service Less Expense



PRIOR to thirty-six years ago leather belting set the standards of price for proper belt service.

At that time Gandy Stitched Cotton Duck Belting was first made.

Today, after thirty-six years of experience with Gandy Belt, thousands of users testify that Gandy does the work equally as well at about 1/3 the cost of leather belting, and at much less than rubber belting.

"Gandy" has set a new standard for belt expense. Do you know what Gandy can do in ***your*** plant? If not, 36 years of success warrants your investigating.

Samples and name of nearest distributor on request.

The Gandy Belting Company
732 Main Street, Baltimore, Md.
New York Office, 36 Warren Street

THE BUYERS' DIRECTORY

Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Deavitt, H. M.

Aerial Tramways.
Broderick & Bascom Rope Co.
Ambursen Co.

Automobile Trucks.
Kissel Motor Car Co.

Babbitt Metal.
Cleveland Alloys Co.
Gerlock, H. W.

Barrows and Trucks.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Martin Bk. Mach. Mfg. Co., H.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.
Gandy Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Sawyer Belting Co.
Scandinavia Belting Co.

Belt Conveyors.
Arbuckle & Co.
Chambers Bros. Co.
Gandy Belting Co.
Link-Belt Co.
Main Belting Co.
Manufacturers Equipment Co.
Scandinavia Belting Co.
Weller Mfg. Co.

Belt Dressing.
"Gripwell" Pulley Covering Co.

Blocks.
Broderick & Bascom Rope Co.

Blowers.
American Blower Co.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.

Boilers.
(See Engines and Boilers.)

Brick Conveyors.
Chambers Bros. Co.
Link-Belt Co.
Manufacturers Equipment Co.

Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eastern Machy. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Brick Machines (Dry Press).
Chicago Brick Machy. Co.
Illinois Supply & Cons. Co.

Brick Machines (Soft Mud).
Eastern Machy. Co.
Manufacturers Equipment Co.

Brick Machines (Stiff Mud).
Arbuckle & Co.
Chambers Bros. Co.
Stevenson Co., The.

Cables and Cableways.
Broderick & Bascom Rope Co.

Cars, Trucks and Turntables.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Cars (Clay).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Cars (Dryer).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Toronto Fdry. & Machine Co.
Trautwein Dryer & Eng. Co.

Cars (Electric).
Atlas Car & Mfg. Co.

Castings.
Arbuckle & Co.
Chambers Bros. Co.
Clearfield Machine Shops.
Gerlock, H. W.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Cartons (Mailing).
Hinde & Dauch Paper Co.

Cement.
Lehigh Portland Cement Co.

Chains (Steam Shovel).
Woodhouse Chain Works.

Clay Feeders and Mixers.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Schaffer Eng. & Eq. Co.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Clay Handling Machinery.
Clearfield Machine Shops.
Link-Belt Co.
Weller Mfg. Co.

Clay Plants Complete.
Atlas Car & Mfg. Co.
Chambers Bros. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Clay Technologist.
Deavitt, H. M.

Clutches (Friction).
Chambers Bros. Co.
Link-Belt Co.
Schultz & Son, A. L.
Weller Mfg. Co.

Coal.
Big Creek Colliery Co.

Coal and Ash Conveyors.
Link-Belt Co.

Colors.
Clinton Metallic Paint Co.

Contracting Engineers and Machinists.
Chambers Bros. Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.
Smith Co., Claude.

Conveying Machinery.
Arbuckle & Co.
Chambers Bros. Co.
Link-Belt Co.
Mathews Gravity Carrier Co.
Weller Mfg. Co.
Scandinavia Belting Co.

Cordage.
Broderick & Bascom Rope Co.

Crushers.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.

Cutters, Automatic Rotary.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M., Fdry. & Sup. Co.

Cutting Wires.
Arbuckle & Co.
Chambers Bros. Co.
Manufacturers Equipment Co.
Specialty Wire Co.
Webb Wire Works.

Dies.
Chambers Bros. Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Disintegrators.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Marion M. Fdry. & Supply Co.

Dryer Cars.
(See Cars.)

Dryers.
American Process Co.
Chambers Bros. Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Dryers (Sand).
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co., The.

Dry Pans.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Clearfield Machine Shops.
Eagle Iron Works.
Jackson & Church Co.
Manufacturers Equipment Co.
Stevenson Co., The.

Dunn Patent.
Dunn Wire-Cut-Lug Brick Co.

Dynamos and Generators.
Westinghouse Elec. & Mfg. Co.

Efficiency Engineers.
Estes, Inc., L. V.

Electric Shovels.
Ball Engine Co. (Erie Shovels)
Link-Belt Co.
Marion Steam Shovel Co.
Thew Automatic Shovel Co.

Electrical Furnaces.
Engelhard, Chas.

Electrical Instruments.
Brown Instrument Co.
Engelhard, Chas.
Taylor Instrument Companies.

Elevator Buckets.
Link-Belt Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Elevators and Conveyors.
Clearfield Machine Shops.
Gandy Belting Co.
Link Belting Co.
Main Belting Co.
Manufacturers Equipment Co.
Mathews Gravity Carrier Co.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Engineers.
Clearfield Machine Shops.
Deavitt, H. M.
Link-Belt Co.
Manufacturers Equipment Co.
Schaffer Eng. & Eq. Co.
Smith Co., Claude.
Trautwein Dryer & Eng. Co.

Engines (Gas).
Bruce-Macbeth Engine Co.

Engines and Boilers.
Arbuckle & Co.
Jackson & Church Co.
Manufacturers Equipment Co.
Murray Iron Wks. Co.

Engineers and Builders.
Broderick & Bascom Rope Co.
Chambers Bros. Co.
Schaffer Eng. & Eq. Co.

Fans.
American Blower Co.
Murray Iron Works Co.
Trautwein Dryer & Eng. Co.

Feed Water Heaters.
Jackson & Church Co.
Murray Iron Wks. Co.

Filter Presses.
Baird Machine & Mfg. Co.
Stevenson Co., The.

Fire Brick Coating.
Johns-Manville Co., H. W.

Fire Extinguishers.
Childs Co., O. J.

Flower Pot Machinery.
Baird Machine & Mfg. Co.

Flue Blowers.
Marion Mach. Fy. & Sup. Co.

Frogs and Switches.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Toronto Fdry. & Machine Co.

Furnaces.
Trautwein Dryer & Eng. Co.
Smith Co., Claude.

Fuel Economizers.
Sturtevant Co., B. F.

Gasoline Shovels.
Thew Automatic Shovel Co.

Gears.
Baird Machine & Mfg. Co.
Link-Belt Co.
Manufacturers Equipment Co.
Schultz & Son, A. L.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Grates and Grate Bars.
Canton Grate Co.
Chicago Brick Machy. Co.
Gerlock, H. W.
Jackson & Church Co.
Manufacturers Equipment Co.
Marion Machine, Fdry. & Sup. Co.
Murray Iron Wks. Co.
Smith Co., Claude.
Toronto Fdry. & Machine Co.

Gravity Carrier.
Mathews Gravity Carrier Co.

Grouter.
Marsh-Capron Co.

Hand Power Presses.
Clearfield Machine Shops.
Lakewood Eng. Co.

Hoists.
Link-Belt Co.
Manufacturers Equipment Co.
Weller Mfg. Co.

Hollow Block Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.

Hygrometers or Moisture Indicators.
Taylor Instrument Companies.

Inspection Tests—Consultation.
Deavitt, H. M.

Interlocking Block.
Smith, W. W.

Kilns.
Claude Smith Co.
Hook Patent Kiln Co.
Illinois Supply & Cons. Co.
Manufacturers Equipment Co.
Ohio Kiln Co.
Schaffer Eng. & Eq. Co., The
Smith Co., Claude.

Kiln Burning System.
Manufacturers Equipment Co.

Kiln Doors and Frames.
Gerlock, H. W.
Manufacturers Equipment Co.
Smith Co., Claude.

Kiln Lugs and Bands.
Gerlock, H. W.
Smith Co., Claude.

Lime Mixer.
Gerlock, H. W.

Link Belting.
Link-Belt Co.

THE BUYERS' DIRECTORY—Continued

Locomotive Cranes.
Link-Belt Co.

Locomotive (Electric).
Atlas Car & Mfg. Co.

Locomotives (Gas).
Baldwin Locomotive Works.

Locomotives (Steam).
Dewey Bros.
Davenport Locomo. Works.

Manganese.
Roessler & Hasslacher Chemical Co.

Mechanical Draft.
Sturtevant Co., B. F.
Trautwein Dryer & Eng. Co.

Metallic Paint.
Clinton Metallic Paint Co.

Molds.
Baird Machine & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.

Mold Sanders.
Manufacturers Equipment Co.

Motors—Electric.
Westinghouse El. & Mfg. Co.

Oil Burners.
Chicago Brick Machy. Co.
Illinois Supply & Cons. Co.
Weller Mfg. Co.
Westinghouse Elec. & Mfg. Co.

Oil Engines.
Chicago Brick Machy. Co.
Weller Mfg. Co.

Oil Test Instruments.
Taylor Instrument Companies.

Pans—Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans.
Arbuckle & Co.
Clearfield Machine Shops.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Pallets and Trays.
Ohio Galvanizing & Mfg. Co.

Patents.
Peck, Hubert E.

Paving Brick Filler (Cement).
Lehigh Portland Cement Co.

Perforated Sheet Metal.
Hendrick Mfg. Co.

Poidometers.
Schaffer Eng. & Eq. Co.

Portable Track.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Manufacturers Equipment Co.
Standard Dry Kiln Co., The.

Potters' Machinery.
Baird Machine & Mfg. Co.
Toronto Fdry. & Machine Co.

Power Plant Equipment (Complete).
Jackson & Church Co.
Link-Belt Co.
Murray Iron Wks. Co.
Taylor Instrument Companies.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Power Transmission.
Link-Belt Co.

Presses—Sewer Pipe and Tile, Nozzle and Sleeve, Tuyere- and Shape Brick.
Baird Machine & Mfg. Co.

Pug Mills.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.
Schultz & Son, A. L.
Stevenson Co., The.

Pulleys—Cast Iron, Clutch and Wood.
(See Supplies.)

Pulley Covering.
"Gripwell" Pulley Covering Co.

Pulverizers.
Arbuckle & Co.
Chicago Brick Machinery Co.
Manufacturers Equipment Co.

Pyrometers.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Englehard, Chas.
Price Electric Co.
Sander Instrument Co.
Stupakoff Laboratories.
Taylor Instrument Companies.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

Quartz Glass Articles.
Englehard, Chas.

Radiation Pyrometers.
Taylor Instrument Companies.

Rails (Frogs and Switches).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Foster Co., L. B.
Frank, M. K.
Toronto Fdry. & Machine Co.

Railway Equipment (Industrial).
Arbuckle & Co.
Atlas Car & Mfg. Co.
Buckeye Rolling Mill Co.
Cincinnati Frog & Switch Co.
Davenport Loco. Works.
Foster Co., L. B.
Gerlock, H. W.
Manufacturers Equipment Co.

Rattler.
Manufacturers Equipment Co.

Recording Gages.
Brown Instrument Co.
Ceramic Supply & Cons. Co.
Price Electric Co.
Sander Instrument Co.
Taylor Instrument Companies.

Represses.
Chambers Bros. Co.
Chicago Brick Machinery Co.

Resistance Thermometers.
Englehard, Chas.

Revolution Indicators.
Brown Instrument Co.

Roofing (Asbestos)
Johns-Manville Co., H. W.

Roofing Tile Machinery.
Manufacturers Equipment Co.

Rope (Wire and Manila).
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

Sand Dryers.
American Process Co.
Jackson & Church Co.
Schaffer Eng. & Eq. Co.

Sand Lime Brick Machinery.
Chicago Brick Machy. Co.
Illinois Supply & Cons. Co.
Jackson & Church Co.
Manufacturers Equipment Co.

Scrapers, Plows and Clay Gatherers.
Arbuckle & Co.
Eagle Iron Works.
Schofield-Burkett Cons. Co.

Screens (Clay and Cement).
Arbuckle & Co.
Chambers Bros. Co.
Hendrick Mfg. Co.
Link-Belt Co
Schofield-Burkett Cons. Co.
Stevenson Co., The.
Weller Mfg. Co.

Sewer Pipe Machinery.
Arbuckle & Co.
Manufacturers Equipment Co.
Stevenson Co., The.
Toronto Fdry. & Machine Co.

Shale Planer.
Arbuckle & Co.

Silent Chain Drives.
Link-Belt Co.

Silo Block.
Mowrystown Brick & Tile Co.

Silo Front.
Zook, G. W.

Steamers (Clay).
Schaffer Eng. & Eq. Co., The.

Steam Gages.
Brown Instrument Co.
Taylor Instrument Companies.

Steam Shovels.
Ball Engine Co. (Erie Steam Shovels)
Marion-Osgood Co.
Marion Steam Shovel Co.
Thew Auto. Shovel Co.

Steel Ties.
Cincinnati Frog & Switch Co.

Sprocket Wheels.
Link-Belt Co.

Supplies.
Arbuckle & Co.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Eastern Machinery Co.
Lakewood Eng. Co.
Manufacturers Equipment Co.
Stevenson Co., The.
Toronto Fdry. & Machine Co.
Weller Mfg. Co.

Switches and Frogs.
Cincinnati Frog & Switch Co.
Buckeye Rolling Mill Co.
Arbuckle & Co.
Atlas Car & Mfg. Co.
Foster Co., L. B.
Toronto Fdry. & Machine Co.

Thermometers.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Standard Dry Kiln Co.
Taylor Instrument Companies.
Thwing Instrument Co.

Tie Plates.
Cincinnati Frog & Switch Co.

Tile Machinery.
Arbuckle & Co.
Chicago Brick Machy. Co.
Manufacturers Equipment Co.
Toronto Fdry. & Machine Co.

Time Clocks.
Hardinge Bros., Inc.

Trade Names Registered
Peck, Hubert E.

Transfer Cars.
Atlas Car & Mfg. Co.
Chase Fdry. & Mfg. Co.
Gerlock, H. W.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co.

Trucks (Auto).
Kissel Motor Car Co.

Turntables.
Jackson & Church Co.
Chase Fdry. & Mfg. Co.
Manufacturers Equipment Co.
Pettigrew Foundry Co.
Standard Dry Kiln Co., The.
Toronto Fdry. & Machine Co.

Unloading Devices for Pans.
Clearfield Machine Shops.
Toronto Fdry. & Machine Co.

Wagons.
Manufacturers Equipment Co.

Watchman's Clocks.
Hardinge Bros., Inc.

Wet Pans.
Jackson & Church Co.
Toronto Fdry. & Machine Co.

Wheelbarrows.
(See Barrows and Trucks.)

Wheels and Axles.
Toronto Fdry. & Machine Co.

Winding Drums.
Manufacturers Equipment Co.
Marion Mach. Fdy. & Sup. Co.
Weller Mfg. Co.

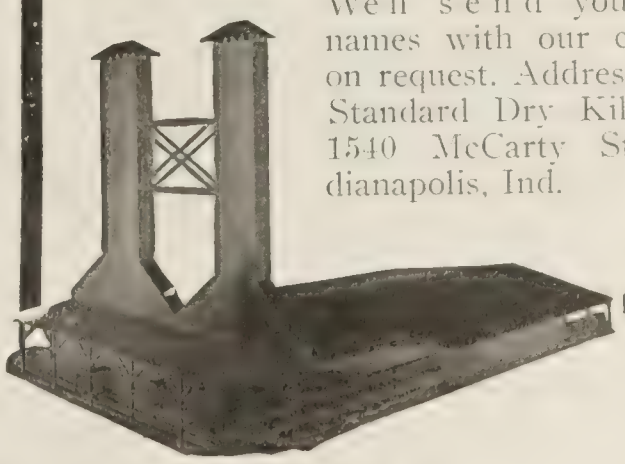
Wire Rope.
Broderick & Bascom Rope Co.
Manufacturers Equipment Co.

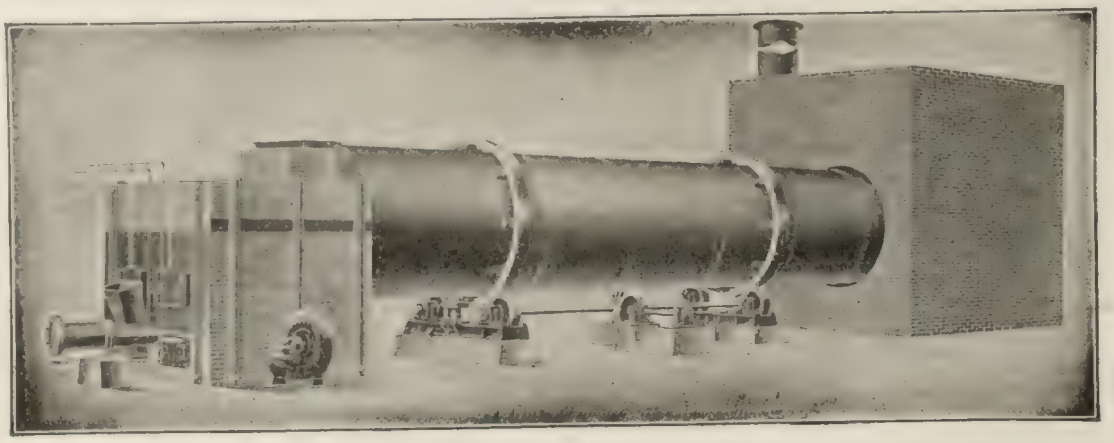
Their Drying Problem Was the Same as *Yours*

Maybe you think no other brickmaker ever had as much trouble in drying as *you* have?

Don't you believe it! We can refer you to lots of others whose clay is of the same nature as yours, and who had the same difficulties to contend with—*until they installed The Standard Natural Draft Drying System.*

Ask them how it works! We'll send you their names with our catalog, on request. Address: The Standard Dry Kiln Co., 1540 McCarty St., Indianapolis, Ind.





ROTARY CLAY DRYER

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

68 William Street
NEW YORK

THE CHASE DRYER CARS

With patented flexible and reversible boxing and roller bearings

The *Best Equipment* is the Equipment that gives you the *Best Service*

The Chase Fdry. & Mfg. Company

Columbus, Ohio





OSGOOD

"18" ¾-yd. Traction Revolving Shovel with independent steam steering engine, also combination hand steering operated from either side of shovel.

The Marion-Osgood Company

Marion, Ohio, U. S. A.

Eastern Office: 51 State Street, Albany, N Y.

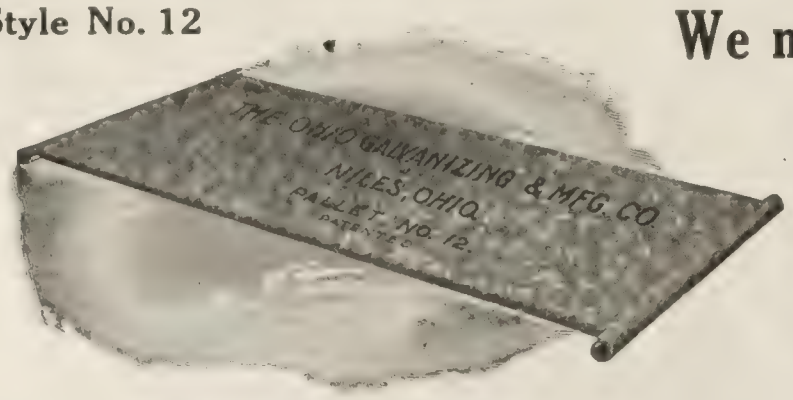
Chicago Agency: The M-C-B Co., McCormick Bldg. Phone Har. 6365.

New York Agency: M. E. Davis, 1682, 50 Church St.

Philadelphia Agency: J. M. Reed Co., Inc., 516 Commercial Trust Bldg.

STEAM SHOVELS DIPPER DREDGES

Style No. 12



A Time and Money Saver

We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.

No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.

Simply let us know what you need or send for complete descriptive matter.

The Ohio Galvanizing & Mfg. Co.

Niles, Ohio

Directory of Clay Products Manufacturers

THE Clay Products Directory in the following pages is issued as a result of the many inquiries received by "Brick and Clay Record" during the year for the names and addresses of manufacturers of burned clay.

Many of these inquiries come from manufacturers of clay products, who, seeing an opportunity of boosting a clay product they, themselves, do not manufacture, desire to see it used to the exclusion of cement, lumber or some other material.

Other inquiries come from architects, contractors and engineers, and quite often lead to a considerable sale.

This directory, therefore, is in response to a real demand and we feel it calls for practical co-operation among clayworkers.

If you really desire to see the clay product industry as a WHOLE take its position at the head of all competing materials you must BOOST.

The boost must begin at home, of course, like all well organized charity, but every time you have a minute to spare you must put in a GOOD word for the clayworker in OTHER lines. Good deeds, like bread cast on the waters, come back to you threefold.

When You Send a Tip to Anyone in the List Tell Them You Saw Their Advertisement in "Brick and Clay Record."

Index of the Clay Product Directory

BLOCK OR TILE (HOLLOW)

Evans Clay Mfg. Co., Uhrichsville, O. 4
Keller Brick Co., The, Cuyahoga Falls, O. 8

BRICK (COMMON)

Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 4
Keller Brick Co., The, Cuyahoga Falls, O. 8
Metropolitan Paving Brick Co., Canton, O. 5

BRICK (FACE)

Alliance Brick Co., Alliance, O. 8
Alliance Clay Pro. Co., Alliance, O. 5
American Enameled Brick & Tile Co., New York, N. Y. 8
Belden Brick Co., Canton, O. 8
Bradford Pressed Brick Co., Bradford, Pa. 7
Hocking Valley Pro. Co., Columbus, O. 7
Hydraulic Press Brick Co., St. Louis, Mo. 7
Ironclay Brick Co., Columbus, O. 7
Keller Brick Co., The, Cuyahoga Falls, O. 8
Kimbell Brick Co., S. S., Chicago, Ill. 6
McArthur Brick Co., McArthur, O. 7
Stark Brick Co., Canton, O. 8

BRICK (FIRE)

Alsey Brick & Tile Co., Alsey, Ill. 3
Brighton Fire Brick Co., New Brighton, Pa. 3
Chicago Retort & Fire Brick Co., Chicago, Ill. 4
Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, O. 4
Evans Clay Mfg. Co., Uhrichsville, O. 4
Maurer & Son, H., New York City. 3
Mexico Brick & Fire Clay Co., Mexico, Mo. 3
Jos. Soisson Fire Brick Co., Bolivar, Pa. 3
Southern Fire Brick & Clay Co., Chicago. 3

BRICK OR BLOCK (PAVING)

Alliance Clay Pro. Co., Alliance, O. 5
Alton Brick Co., Alton, Ill. 4
Barr Clay Co., Streator, Ill. 4
Bessemer Limestone Co., Youngstown, O. 5
Big Four Clay Co., Canton, O. 6
Carlyle Paving Brick Co., Portsmouth, O. 6
Clinton Paving Brick Co., Clinton, Ind. 5
Danville Brick Co., Danville, Ill. 5
Deckman-Duty Brick Co., Cleveland, O. 5
Hamburg Vit. Brick Co., Philadelphia, Pa. 6
Harris Brick Co., Cincinnati, O. 6
Hocking Valley Brick Co., Columbus, O. 5
Metropolitan Paving Brick Co., Canton, O. 5
Murphysboro Paving Brick Co., Murphysboro, Ill. 6
Purington Paving Brick Co., Galesburg, Ill. 6
Shawmut Paving Brick Co., Shawmut, Pa. 6
Sterling Brick Co., Olean, N. Y. 4
Terre Haute Vit. Brick Co., Terre Haute, Ind. 4
United Brick Co., Conneaut, O. 5

CLAYS (FIRE, TERRA COTTA AND TILE)

Quinn, John, Houtzdale, Pa. 3

DEALERS

American Clay & Cement Corp., Rochester, N. Y. 7
Bonner & Marshall Brick Co., Chicago, Ill. 7
Kimbell Brick Co., S. S., Chicago, Ill. 6
Globe Brick Co., East Liverpool, O. 8

FIRE PROOFING

Metropolitan Paving Brick Co., Canton, O. 5

RAGGLE BLOCKS

Kimbell Brick Co., S. S., Chicago, Ill. 8

REFRACTORIES

Davis Fire Brick Co., Oak Hill, O. 3
Dover Fire Brick Co., Cleveland, Ohio. 4
Evans Clay Mfg. Co., Uhrichsville, O. 4

SALT GLAZED BRICK

Stark Brick Co., Canton, O. 8

SEWER PIPE AND BRICK

Evans Clay Mfg. Co., Uhrichsville, O. 4

TILE (DRAIN)

Evans Clay Mfg. Co., Uhrichsville, O. 4

TILE (FLOOR)

Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (PROMENADE)

Pittsburg Tile Mfg. Co., E. Liverpool, O. 7

TILE (ROOFING)

National Roofing Tile Co., Lima, O. 7

Trade Names Now in Use

on Face Brick and Other Clay Products

Consult this list before you adopt or create a name for your material and so avoid confusion and duplication. Many of the names have been registered in the U. S. Patent Office at Washington D. C., and your use of them constitutes an infringement.

If any name that you are now using does not appear, advise us, and we will do what we can to protect you in that use, by giving publicity to your claim.

Acadia—Nova Scotia Clay Works, Halifax,Can.
Adel Irontile—Adel (Ia.) Clay Pro. Co.
Afghan—Crawfordsville (Ind.) Shale Brick Co.
Algonquin—Alliance (O.) Brick Co.
Ante-Fired—London (Ont.) Pr. Bk. & Tile Co.,
Antique—The Everhard Co., Massilon, Ohio.
Arabian—Dubois & Butler Co., Falls Creek, Pa.
Armor—Greenpoint Fire Brick Co., Brooklyn, N. Y.
Artbrique—Yingling-Martin Brick Co., Johnsonburg, Pa.
Art-Tex.—American Fire Brick Co., Spokane, Wash.
Astrakhan—Columbus (O.)Bk. & Terra Cotta Co.
Athena—Hocking Valley Fire Clay Co., Nelsonville, O.
Aztec—Acme Pressed Bk. Co., Fort Worth, Tex.
Beaver—Nova Scotia Clay Wks., Halifax, Can.
Belden—The Belden Brick Co., Canton, O.
Bessemer Block—Bessemer Limestone Co., Youngstown, O.
Big Four Block—Big Four Clay Co., Canton, O.
Black Glazed Mission—American Fire Bk. Co., Spokane, Wash.
Bokhara—Hydraulic-Press. Brick Co., St. Louis.
Bossage—Hanover Red Pressed Brick Co., Newark, O.
Bradford Pressed Brick—Bradford (Pa.) Pres'd Bk. Co.
Bradford Red—Bradford (Pa.) Pressed Bk. Co.
Bradford Ruffs—Bradford (Pa.) Pressed Bk. Co.
Bronze Brown Mission—McArthur (O.) Bk. Co.
Bronze Mission—American Fire Brick Co., Spokane, Wash.
Brown Stone—Shepherd Bros., Columbus, Ga.
Buckskin Pavers—Barber Asphalt Pav. Co., Des Moines, Ia.
Buff Velvet—W. B. Ferris Brick Co., Columbus, O.
Caledonian—Fiske & Co., Inc., Boston and New York.
Calico—Adel (Ia.) Clay Pro. Co.
Car-Bex—London (Ont.) Pr. Brick & Tile Co.
Carlyle Block—Carlyle Pav. Brick Co., Portsmouth, O.
Century Block—Metropolitan Paving Brick Co., Canton, O.
Chinchilla—Hydraulic-Press Bk. Co., St. Louis, Mo.
Chocolate Special—Midland Bk. Co., Peru, Kan.
Cla-Rox—Sioux City (Ia.) Brick & Tile Co.
Claycraft—Claycraft Brick Co., Columbus, O.
Claycraft Colonial Reds—Claycraft Brick Co., Columbus, Ohio.
Claycraft Corduroys—Claycraft Brick Co., Columbus, O.
Claycraft Mingled Shades—Claycraft Brick Co., Columbus, O.
Claycraft Velours—Claycraft Brick Co., Columbus, O.
Clayton Missions—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Clayton Velvets—Washington Brick, Lime & Sewer Pipe Co., Portland, Ore.
Cloister—Western Brick Co., Danville, Ill.
Colonial Reds—Belden Brick Co., Canton, O.
Colonial Reds—Crawfordsville (Ind.) Shale B. Co.
Colonial Swells—W. & J. Post, Glen Head, Long Island, N. Y.
Colonial 12" Mission—American Fire Bk. Co., Spokane, Wash.
Con-Tex—Continental Brick Co., Aledo, Ill.
Continental Paver—Continental Brick Co., Aledo, Ill.
Coruga—Colonial Pressed Brick Co., Mogadore, O.
Corsweve—Thomas Moulding Brick Co., Chicago, Ill.
Coshocton—Coshocton (O.) Brick Co.
Craftsman—Pearl Clay Prod. Co., Bradford, Pa.
Cravenette—Standard Brick Co., Macon, Ga.
Crucial—Crucial Fire Brick Co., Rome, Ga.
Dabney—Dabney Brick Co., Galveston, Texas.
Davenport—Davenport (Ia.) Brick & Tile Co.
Diamond C—Cook, E. L., State Farm, Mass.
Denison—Mason City (Ia.) Brick & Tile Co.
Dixie Brick—Sumter Brick Works, Sumter,S.C.
Dubltex—The Everhard Co., Massillon, O.
Dutch—Dubois & Butler Brick Co., Falls Creek, Pa.
Egyptian Paving Block—Murphysboro (Ill.) Paving Brick Co.
Empire—Western Brick Co., Danville, Ill.
Everhard—Everhard Co., Massillon, O.
Everlasting—Mason City (Ia.) Brick & Tile Co.
Fabrick—Far West Clay Co., Tacoma, Wash.
Facetone—Sioux City (Ia.) Brick & Tile Co.
Fallston Iron Spots—Fallston Fire Clay Co., Pittsburgh, Pa.
Federal—Federal Clay Pro. Co., Mineral City, O.
Flash—W. B. Ferris Brick Co., Columbus, O.
Ginger—Fraser-Myers Co., Dallas, Tex.
Glenboig—Alexander Gibb, Montreal, Que.
Grey Velvet—W. B. Ferris Brick Co., Columbus, O.
Greendales—Hocking Valley Pro. Co., Columbus, O.
Greendale Red Rugs—Hocking Valley Pro. Co., Columbus, O.
Greendale Rugs—Hocking Valley Pro. Co., Columbus, O.
Gun Metal Mission—McArthur (O.) Bk. Co.
Hanover Reds—Hanover Red Pressed Brick Co., Newark, O.
Hocking Block—Hocking Valley Brick Co., Columbus, O.
Holland Split—Thomas Moulding Brick Co., Chicago, Ill.
Homespun—Thomas Moulding Brick Co., Chicago, Ill.
Homestead—Farr Brick Co., Cleveland, O.
Hood's Old English—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Oriental—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hood's Pottery Brick—B. Mifflin Hood Bk. Co., Atlanta, Ga.
Hy-namel—Hydraulic-Press Brick Company, St. Louis, Mo.
Hypo—Hebron (Ind.) Clay Pro. Co.
Hy-tex—Hydraulic-Press Bk. Co., St. Louis, Mo.
Imperial—Federal Clay Products Co., Mineral City, Ohio.
Imperial—Ludowici-Celadon Co., Chicago, Ill.
Indian Head—Claycraft Mining & Brick Co., Shawnee, O.
Indiana Harvards—Indiana Brick Co., Anderson, Ind.
Ironclay—Iron Clay Brick Co., Columbus, O.
Ironstone Block—Terre Haute (Ind.) Vit. Bk. Co.
Irontile—Adel (Ia.) Clay Pro. Co.
Load Bearing Tile—Mason City (Ia.) Brick & Tile Co.
Keim—Keim Brick & Tile Co., Louisville, O.
Klay-Kraft—Mason City (Ia.) Brick & Tile Co.
Mason City—Mason City (Ia.) Bk. & T. Co.
Medal Block—Deckman-Duty Brick Co., Cleveland, O.
Metropolitan Block—Metropolitan Pav. Brick Co., Canton, O.
Milton—Milton (Ont.) Pr. Brick Co.
Mingled Shades Velvet—W. B. Ferris Brick Co., Columbus, O.
M-i-t-u-s-a—Brush-McCoy Pottery Co., Zanesville, Ohio.
MBCo—Martinsville (Ind.) Brick Co.
Mission—McArthur (O.) Brick Co.
Monk Brown Mission—McArthur (O.) Bk. Co.
Moquette—Beaver Clay Mfg. Co., New Galilee, Pa.
Mosaic—Western Brick Co., Danville, Pa.
Navajo—Kansas Buff Brick & Mfg. Co., Buffville, Kan.
Navajo—Puritan Brick Co., Hamden, O.
Nelsonville Block—Nelsonville (O.) Bk. Co.
Nuvogue—Boone (Ia.) Brick, Tile & Pav. Co.
Nuyoco—New York Clay Pro. Co., Van Deventers, N. J.
Old Hickory—Colonial Pressed Bk. Co., Mogadore, O.
Onondaga—Onondaga Vit. Brick Co., Syracuse, N. Y.
Old English Mission—McArthur (O.) Bk. Co.
Old Gold Mission—American Fire Brick Co., Spokane, Wash.
Old Rose Colonial—Marion (Ind.) Brick Wks.
Olean Block—Sterling Brick Co., Olean, N. Y.
Oriental—Poston Paving Brick Co., Crawfordsville, Ind.
Pearl—Pearl Clay Products Co., Bradford, Pa.
Persian—Acme Brick Co., Cayuga, Ind.
Persian Split—Thomas Moulding Brick Co., Chicago, Ill.
Pompeian—W. B. Ferris Brick Co., Columbus, O.
Portage-Ruffs—Keller Brick Co., Cuyahoga Falls, O.
Porter National—Globe Brick Co., Wellsville,O.
Promenade—Yingling-Martin Brick Co., Johnsonburg, Pa.
Purington Pavers—Purington Pav. Brick Co., Galesburg, Ill.
Pyrene—Standard Brick Co., Macon, Ga.
Red Rock Ruffs—Auburn Shale Brick Co., Gettysburg, Pa.
Red Velvets—Indiana Bk. Co., Anderson, Ind.
Rex Matt—Bryant Sup. Co., Kansas City, Mo.
Ridgway—Ridgway (Pa.) Brick Co.
Roman Ante-Fired Process—London (Ont.) Pressed Brick & Tile Co., Ltd.
Rose Persian Mission—McArthur (O.) Bk. Co.
Ruftex—Thomas Moulding Brick Co., Chicago.
Rug—Hocking Valley Pro. Co., Columbus, O.
Rugby—Standard Brick Co., Evansville, Ind.
Rugosa—Wisconsin Lime & Cement Co., Chicago, Ill.
Rustic—London (Ont.) Pressed Bk. & Tile Co., Ltd.
Rustico—Continental Brick Co., Aledo, Ill.
Rustique Oriental—Martinsville (Ind.) Brk. Co.
Saraband—Hydraulic-Press Bk. Co., St. Louis, Mo.
Savage—Federal Clay Product Co., Mineral City, Ohio.
Scotia—Nova Scotia Clay Works, Halifax, Can.
Seal Brown Mission—McArthur (O.) Bk. Co.
Shale-Tex—Streator (Ill.) Brick Co.
Shamrock Mission—McArthur (O.) Bk. Co.
Shor-Wil—Shorey-Willis Bk. & Supply Co., Cincinnati, O.
Sioux—Sioux City (Ia.) Brick & Tile Co.
Sparta—Federal Clay Product Co., Mineral City, Ohio.
Speedway Block—Alliance (O.) Clay Prod. Co.
Stanton—Edward S. Stanton, Cleveland, Ohio.
Steel Clay—Straitsville Impervious Bk. Co., New Straitsville, O.
Sun-Tex—Sun Brick Co., Ltd., Toronto, Ont.
Tamco Brick—T. A. Morrison & Co., Montreal, Canada.
Tapestry—Fiske & Co., Inc., Boston and New York.
Tavern Brick—Metropolitan Pav. Brick Co., Canton, O.
Templeton—Hay Walker Brick Co., Pittsburgh, Pa.
Texcit Brick—Geo. W. Camp, Texas City, Ill.
Texcit Tile—Geo. W. Camp, Texas City, Ill.
Textur—Thomas Moulding Brick Co., Chicago, Ill.
Texturesque—Diamond Brick Co., San Francisco, Cal.
Tiffany—Thomas Moulding Brick Co., Chicago.
Tiger Shale—Belden Brick Co., Canton, O.
Toronto—Toronto Fire Clay Co., Toronto, O.
Tosco—Lawhead Brick & Tile Works, Loogootee, Ind.
Trafford Reds—Houston Bros. Co., Pittsburgh, Pa.
Tuillery—Sioux City (Ia.) Brick & Tile Co.
Turkestan—Beaver Clay Mfg. Co., New Galilee, Pa.
Turkish Mission—McArthur (O.) Bk. Co.
Turkish Rug—American Fire Brick Co., Spokane, Wash.
Turko—Rochester (Pa.) Clay Products Co.
Velour—Hydraulic-Press Brick Co., St. Louis.
Velvet—W. B. Ferris Brick Co., Columbus, O.
Velvet-Nap—W. B. Ferris Brick Co., Columbus, O.
Verd-Antique—Meacham & Wright Brick Co., Chicago, Ill.
Vitrified Velvet—Adel (Ia.) Clay Pro. Co.
Vogue—Bessemer Fire Brick Co., Birmingham, Ala.
West Salem Matts—West Salem (Ill.) Hollow Brick & Tile Co.

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

For **Side Walls**
For **Crowns**
For **Fire Arches**
For **Perforated Bottoms**

Consult us when in market.
We are ready to serve you.

DAVIS FIRE BRICK CO.
OAK HILL, OHIO

If You Believe Efficiency is a Factor

in the cost of production, there is no place it will show more than in the life and service of your kilns.

When building new kilns or repairing old ones why not use material that will give best service, reduce repair bills, extend the life of your kilns, enlarge opportunities for increased output and swell profits.

We make a specialty of high grade fire brick for kiln construction, and special shapes for fire boxes, arches, flues and bottoms.

Consult us before buying.

Ten plants located on the Pennsylvania, New York Central and B. & O. railroads.

Jos. Soisson Fire Brick Company

General Office, **Connellsville, Pa.**
Sales Office, **Bolivar, Pa.**
J. B. Hammond, Sales Manager

Mexico Brick & Fire Clay Co.
Mexico, Mo.

Manufacturers of

High Grade Fire Brick

and Special Fire Clay Shapes

Fire Brick and Floor Tile for Brick and Tile Kilns a Specialty

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

We Can Save You Money, Time and Trouble on Fire Brick

BECAUSE OF

Quality, Price and Service

Freight Rates on all R.R.'s in UNITED STATES and CANADA

A Trial Shipment Will Convince You
WRITE US

ALSEY BRICK & TILE COMPANY
ALSEY, ILLINOIS

Southern Fire Brick & Clay Co.

Fire Brick for Kilns.

High grade fire brick, cupola blocks and fire clay.

Write for prices.

Office, 1203 Chamber of Commerce Bldg., Chicago, Ill.

For Lease

Two clay mines sufficiently developed to load two hundred tons per day. Clay twelve feet thick. Two million tons of best block and burley fire clay.

Mines shipping on Pennsylvania Railroad. New York Central Railroad two miles distant. For further particulars, address John Quinn, Houtzdale, Pa.

How to Analyze Clay

A practical work for practical people. A Text Book for Clay Analysis, by Holden M. Ashby, Prof. of Organic Chemistry, Harvard Medical College, and Instructor Chicago Night School of Chemistry. An Aid to Beginners and full instructions for making clay analysis. 64 pages, with illustrations. Postpaid to any address in the world, $1.00.

Brick and Clay Record
445 Plymouth Court, Chicago, Ill.

AJAX
FIRE BRICK



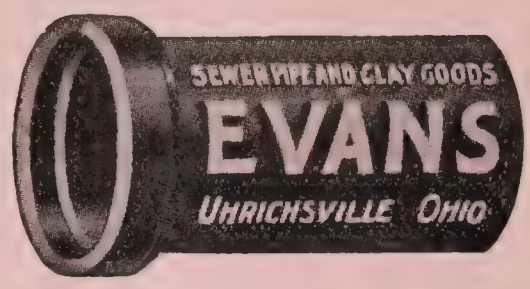
Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.
208 S. La Salle St., CHICAGO

FIRE BRICK
DOVER FIRE BRICK CO.
Incorporated 1870
— MANUFACTURERS OF —
Dover and Buckeye Fire Brick
Unexcelled for Kiln Purposes
509 Cuyahoga Bldg. Cleveland, Chio

The Evans Clay Manufacturing Co.
Uhrichsville, Ohio



Standard Sewer Pipe
Double Strength Pipe
Wall Coping
Chimney Tops
Building Blocks

Flue Linings
Stove Pipe
Thimbles
Fire Brick
Drain Tile

And other Fire Clay Products

PAVING SIDEWALK
BUILDING FOUNDATION
BRICK AND BLOCK
The Barr Clay Co.
C. C. BARR, Pres.
STREATOR, ILL.

Ironstone Block
"Often Rattled But Never Embarrassed"
Repressed and Dunn Wire-Cut-Lug
Terre Haute Vitrified Brick Co.
Terre Haute, Ind.

Alton Brick Company
Makers of High Quality Brick for
Roadways and Permanent Buildings
Repressed and Dunn Wire-Cut-Lug Block.
ALTON, ILLINOIS

Sterling Brick Company
OLEAN, N. Y.
Manufacturers
OLEAN BLOCK
Dunn-Wire-Cut-Lug
Made from shale
VITRIFIED
Many are not as good,
A few may be as good,
None Are Better

Bessemer Limestone Company

Manufacturers of

Bessemer Block

Repressed and Dunn Wire-Cut-Lug

YOUNGSTOWN, OHIO

The Alliance Clay Product Company

Manufacturers of the Famous

Speedway Block

Dunn Wire-Cut-Lug Brick.

Also High-Grade Building and Face Brick.

ALLIANCE - - - - OHIO

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

DANVILLE, ILL.

LET US QUOTE YOU PRICES

The United Brick Company

GENERAL OFFICE
GREENSBURG, PA.

WORKS
CONNEAUT, OHIO

Manufacturers of Wire Cut Lug Paving Brick
(DUNN PATENT)

A High Grade Paving Block for City Streets and Main Highways

CLINTON PAVING BRICK CO.

CLINTON, INDIANA

Are manufacturers of repressed vitrified shale paving brick of unquestioned merit and also licensees of DUNN'S Wire-Cut-Lug Block, which is the acme of perfection for street paving material.

Write us for samples and prices.

Clinton Paving Brick Company
Clinton, Indiana

Hocking Valley Brick Co.

Manufacturers of

Hocking Paving Block

Repressed and Wire-Cut Lugs, Dunn Patent.

Plants Logan, O.

General Office Columbus, O.

Output 15,000,000 Annually

THE DECKMAN-DUTY BRICK CO.

CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND THE BEST BRICK PAVED CITY AND COUNTY IN THE WORLD

"Licensee of Dunn Wire-Cut-Lug Block. The *Best* and most suitable form of *Paving Block for Road Way Improvements* in use with the *Cement Grout Filler.*"

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

PURINGTON PAVERS

ARE MADE OF

GALESBURG SHALE

The Purington Paving Brick Co.

GALESBURG, ILL.

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA. Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

The Carlyle Paving Brick Co.

Manufacturer of

Carlyle Block

Best Testers and Most Durable

Portsmouth, Ohio

The Harris Brick Co.

Manufacturers of

HARRIS PAVERS

Factory: Zanesville, Ohio

Office: St. Paul Bldg. Cincinnati, O.

Hamburg Vitrified Brick Company

PAVING BLOCKS AND
VITRIFIED BUILDING BRICK

Works Hamburg, Pa.

Office, 1116 Fidelity Building Philadelphia, Pa.

Bell Telephone Locust 2822

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

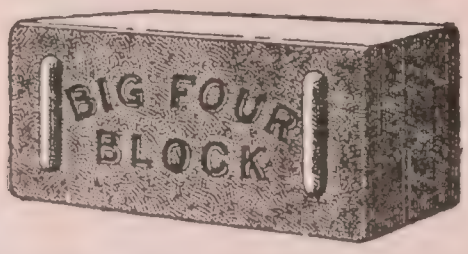
THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, - ILLINOIS

ALSO DUNN WIRE-CUT-LUG BRICK.

A Uniform Block which makes an Ideal Pavement



THE BIG FOUR CLAY CO.

City National Bank Bldg. Canton, Ohio

L. D. BINYON, President — H. L. MATZ, Vice-President — JAS. A. HOGAN, Sec'y and Treas.

S. S. Kimbell Brick Co.

Facing Brick, Mortar Colors, Raggle Blocks

Main Exhibit and General Offices:
304-306 Chamber of Commerce

Branch Exhibit and Sales Room:
738 South Michigan Boulevard

CHICAGO

"Mission Brick"

"Old English Mission"
A Mixture of Different Shades.

"Gun Metal Mission" "Turkish Mission"
"Seal Brown Mission" "Rose Persian Mission"
"Bronze Brown Mission" "Shamrock Mission"
"Monk Brown Mission"

"Kenilworth Brick"

These are our new vertical cut extra rough texture brick.

Write for Samples and Prices.

The McArthur Brick Co.

Face Brick Specialists. McArthur, Ohio

Hy-tex

The Standard of Quality in Brick

Every texture and color of brick may be found in the Hy-tex line. Send for information to the nearest Branch.

BRANCH OFFICES AND EXHIBIT ROOMS

Baltimore; Chicago; Cleveland; Davenport; Dubois, Pa.; Indianapolis; Kansas City; Minneapolis; New York City; Omaha; Philadelphia; Toledo; Washington, D. C.

HYDRAULIC-PRESS BRICK COMPANY
ST. LOUIS

Bradford Pressed Brick Company

Bradford, Pennsylvania

Sole makers of the famous BRADFORD PRESSED BRICK" (Trade Mark Reg. U. S. Pat. Office) the brick of the DISTINCTIVE RED.
"BRADFORD REDS"—the smooth facing brick. Dry Pressed or Impervious, the former in Standard and Roman sizes. Ornamentals in stock.
"Bradford Ruffs"—a rough textured brick for unusual effects.

Samples sent prepaid on request.

Write for "RED" Catalog.

American Clay & Cement Corporation

ROCHESTER, N.Y.

Manufacturers of Clay Products

Distributors Face and Ornamental Brick-Masons' Supplies—All Indestructible Building Materials

THE NATIONAL ROOFING TILE CO.

LIMA, OHIO

Manufacturers of the Patent Double

Inter-Locking Roofing Tile

In Two Patterns

Made in Natural Red and Green Glazes

Send Plans for Estimates

Write for Samples and Catalogue

Pittsburg Tile Mfg. Co.

MFRS. OF FLOOR TILE

DOMESTIC QUARRIES

Promenade Tile—
Cove Base, Angles, Caps, all sizes.

EAST LIVERPOOL - OHIO



The Ironclay Brick

has long been recognized as the standard by which all other Flashed brick are measured. For Composition, Richness of Color and Durability it is without a peer.

Standards, Romans, Normans in seven colors in Stock.

THE IRONCLAY BRICK CO.
COLUMBUS, OHIO

Bonner & Marshall Brick Company

1205-6 Chamber of Commerce Building
Chicago, Ill.

We handle every kind of good facing brick.

(*Exclusive distributors of the famous Oriental Brick*)

TRADE MARK

Belden Brick

CANTON, OHIO

The Best Face Brick Made

Five Factories—All Colors

The Belden Brick Co.

Canton, Ohio

PORTAGE RUFFS

Sold in mixture. Dark reds blending with flashed brown make a wall of rich beauty.

We make common brick and hollow building tile also.

Agencies Solicited

Prices and Samples—as requested.

THE KELLER BRICK CO.

CUYAHOGA FALLS, O.

ALLIANCE RUG BRICK

Excel all other brick as to texture and beauty of coloring. The chromatic scale of colors runs through the beautiful Rug-texture faces of these brick, most of the brick showing **three** or **four** or **more** of the seven primary colors. One of the most popular sellers in America today.

Mr. Agent, this brick will get you business. Write for samples.

The Alliance Brick Co., Alliance, Ohio

SALT GLAZED BRICK

Beautiful Rich Colors

Buff, Orange and Mahogany

The Stark Brick Co.

CANTON, OHIO

THE GLOBE BRICK COMPANY

Exclusive Manufacturers of

"PORTER NATIONAL"

Fire Clay Paving Blocks

Works at Kenilworth, W. Va.

P. O.—East Liverpool, Ohio

POSTERETTES



160,000 of these stamps have been used by brick-makers throughout the country. As many pieces of mail, and express matter, have carried the "Build with Brick" slogan. It is printed in bright colors and "catches the eye."

How about your using some of them? It is an inexpensive way of advertising your material.

Printed in four colors

Gummed and ready to stick on your letters, envelopes and packages.

$1.50 per thousand postpaid

Send your orders to

BRICK AND CLAY RECORD

445 PLYMOUTH COURT CHICAGO

"AMERICAN" ENAMELED BRICK

All Standard Colors and Sizes. Bright, Medium or Matt Finish. Agents in All Principal Cities.

American Enameled Brick & Tile Co.

Manufacturers of Enameled Brick Exclusively.

Factory
South River, N. J.

General Office,
1182 Broadway, N. Y.



66,000 Brick at a Cost of Only $6.37

Including Engineer, Helper, Coal and Water

A report received from the Walker & Frank Brick Co., Detroit, Mich., recording test of the type O Thew Shovel, made August 7, 1914, was as follows:

Clay handled in 8 hrs. 10 min.	160 cu. yds.
Number of cars loaded	86
Capacity of cars	2 cu. yds.
Average loading time per car	3 min.
Daily output	66,000 brick
Total cost for engineer, helper, coal and water	$6.37

Complete information regarding this and numerous other tests under conditions similar to your own will be sent upon request.

Ask to be shown the facts and request copy of "Booklet A."

FULL CIRCLE SWING — THEW — HORIZONTAL CROWDING MOTION — ELECTRIC SHOVELS

THE THEW AUTOMATIC SHOVEL CO. LORAIN, OHIO

Here is a Kiln Built with Common Sense

The Schaffer Semi-Continuous Kiln is revolutionary only in that it follows Nature's Laws. The average kiln builder gets confused in the maze of dampers, tunnels, forced draft systems, etc., and before he gets through he has upset **Natural** Laws and seeks to make fuel and heat do **impossible** things.

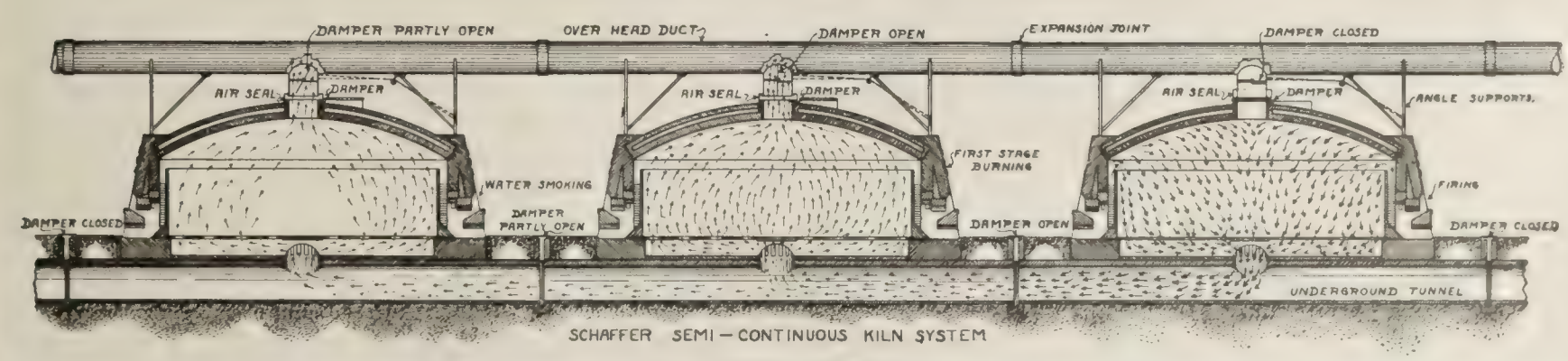
The Schaffer Semi-Continuous Kiln utilizes well-known principles

There is no magic about it—no hocus pocus—now-you-see-it-now-you-don't—stunts. Just plain, common sense, mixed with practical experience and engineering ability.

We have a pamphlet that tells all about this sensible kiln—SEND FOR IT

The narrow confines of this ad will not permit us to tell you just HOW and WHY the Schaffer Semi-Continuous Kiln is built, but we have a pamphlet that tells the story briefly, but completely. We would be pleased to send you a copy.

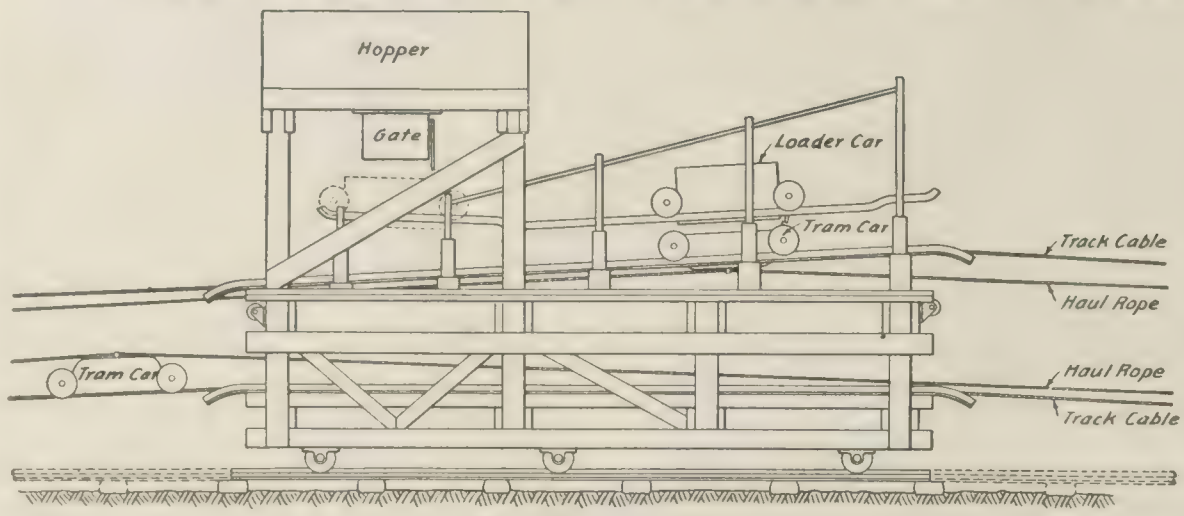
THE SCHAFFER ENGINEERING & EQUIPMENT CO., Inc, Tiffin, Ohio



SCHAFFER SEMI—CONTINUOUS KILN SYSTEM

Patent Allowed

MOVABLE OR MULTIPLE LOADING POINTS



Movable Loader.

IT often happens that our tramway has to serve two or more mine tunnels, etc. This involves no special construction other than to set up a separate automatic loader at each loading point. Assuming that the amount of material handled is the same at each point, then if there are two loading points, each alternate car is so triggered as to engage its corresponding loader—if there are three loading points, every third car is triggered to engage its own loader, etc. The whole loading scheme is therefore as automatic as if there were but one loader at the terminal.

In many other cases such as excavation in clay banks, gravel pits, sand banks, etc., there is only one loading point required, **but this must be movable** and so arranged as to travel directly with the steam shovel or other excavating machinery. We solve this problem in a very simply and practical manner.

The loader instead of being a part of the terminal frame, is mounted on a separate frame of its own which rolls on flanged car wheels. It is shifted from point to point by laying down temporary ties and two lengths of rail ahead of it precisely as with a steam shovel.

Over the loader is a small hopper bin usually of from 2 to 5 yds. capacity. This bin has in it one or more undercut gates which are hand operated and which discharge their load cleanly into the loader car beneath, which is then picked up automatically by the first car that comes along, the same as in standard work.

If scrapers or wheelbarrows are used for collecting the material a movable inclined runway of plank is carried across the tramway. The wheelbarrows or scrapers drop their load directly into or alongside the throat of the hopper which is in this case only equal in capacity to the loader car.

By this arrangement the steam shovel and the loader travel together back and forth across the pit, being shifted sideways from time to time as required.

In our next advertisement we will show how we treat the problem of multiple or movable dumping points.

Respectfully submitted,

AMBURSEN COMPANY, Tramway Dept., 61 Broadway, New York

Signs of the Times that Point the Way to a Greater Prosperity for Burned Clay

Build with Brick

BELDEN BRICK CO.,-CANTON

THESE SIGNS ARE SHEET STEEL

with embossed white letters on a dark blue background. They are pierced with six holes for tacking to wood or, with a little wire, you can hang them on the fences along the roads to your town where the farmer, the tradesman, the motorist, and in fact every traveler can read the "Build with Brick" message.

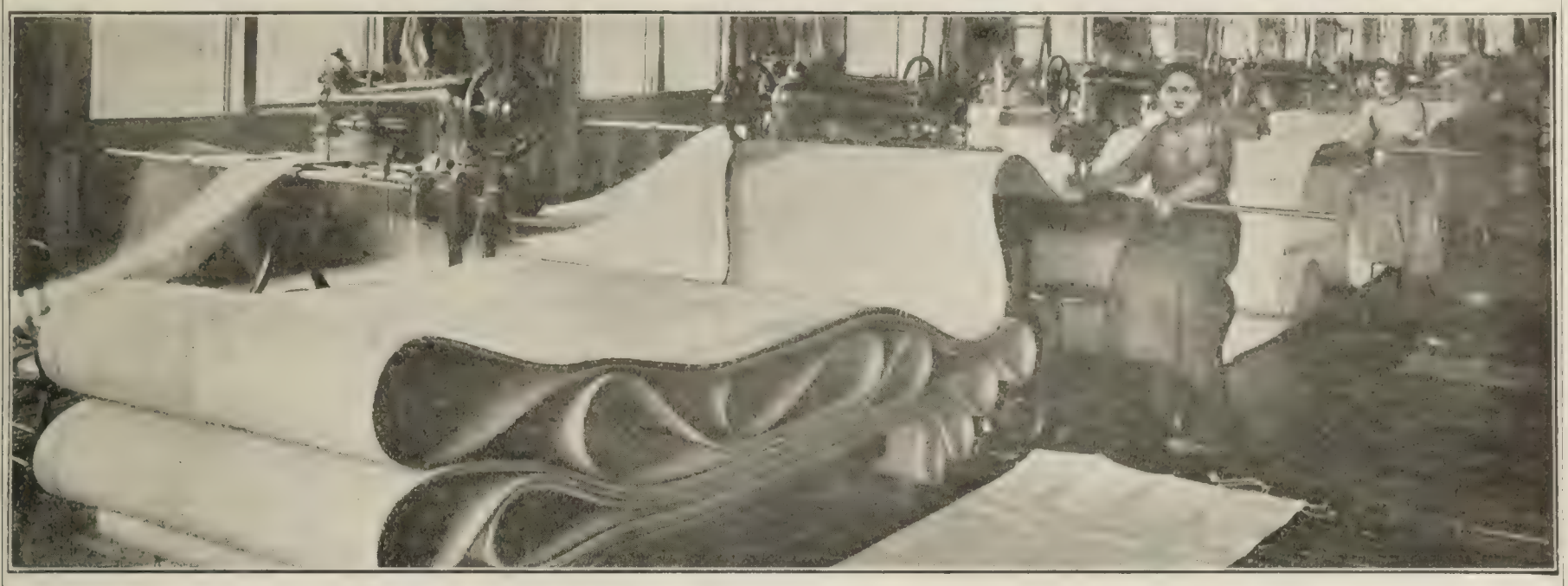
WE SELL THESE SIGNS

at the low cost we were able to obtain by contracting for a large number. The sign illustrated costs $6.00 per hundred, with an extra charge of $1.25 for the first hundred, and fifty cents for each additional hundred for imprinting your name. Signs similar in style to this but without the name of the brickmaker can be had for $5.00 per hundred.

Send your orders to

BRICK & CLAY RECORD, 445 Plymouth Court, CHICAGO

Every Stitch Counts



—In the manufacture of a belt. If the stitching is poorly done belts will not withstand the severe tests to which they are subject. The above photograph of a FORTY-EIGHT inch TEN ply SAWYER belt was taken in our factory. Write for booklet "F" and learn of the care exercised in making **Sawyer** Belts, and why you should use them.

THE SAWYER BELTING COMPANY, Cleveland, O.

See That Flange?

That is the important Patented Feature of the

MATHEWS GRAVITY BRICK CONVEYER

This simple device acts as a guard rail, but is a part of the roller and revolves with it, enabling brick to be conveyed long distances on a very slight grade.



For all Brick Handling purposes, under all conditions, the Mathews conveyer is the only device now in successful use.

No power required.
Easy to operate.
Cheap labor employed.
Portable.
Strong and durable.

Ask for Catalog and list of users.

Mathews Gravity Carrier Co.

Branch Offices
In All Leading
American Cities.

Main Office and Factory ELLWOOD CITY, PA.
Branch Factories: TORONTO, ONT. LONDON, ENG.



"Samson Interlocking Tile"

Patented U. S. March 10th, 1910. No. 1,089,507

The 20th Century Building Material

The illustrations only show a few of the many merits of "Samson Tile" which build any desired thickness of wall, and produce *smooth, scored or rough* face.

There is going to be a big demand for a rough Face Texture Tile, for Resident, Factory and all building where tile may be used. *No other* tile possesses the merits of "Samson Tile" for this construction, with its narrow mortar beds and horizontal dead air spaces which the tile form when laid.

A great number of the live wires of the clayworking industry are contracting for territory for the manufacturing and sale of "Samson Tile." Write today or you may be too late. License granted only to responsible firms.

W. W. Smith, Shallow Lake, Ont., Can.

A Photographic Demonstration

This scene of the clay pit of the Jova Brick Works, Roseton, N. Y., shows a Schofield-Burkett Excavator in operation. It shows how this machine solved the clay digging and delivery problem in Hudson River district. Records show it loads about *300 yards* of tough clay per 10 hour day. A 75 H. P. motor supplies the power. This is actual *proof* that

The Schofield-Burkett Excavator

is the simplest, most practical and most economical earth moving machine ever devised. Without industrial cars and track, it will *dig* and *deliver* any kind of sand, gravel, clay or shale to your conveyors or hopper 100 to 600 cubic yards per day.

We Guarantee Results

We are ready to make a positive guarantee as to results. We take all the risk.



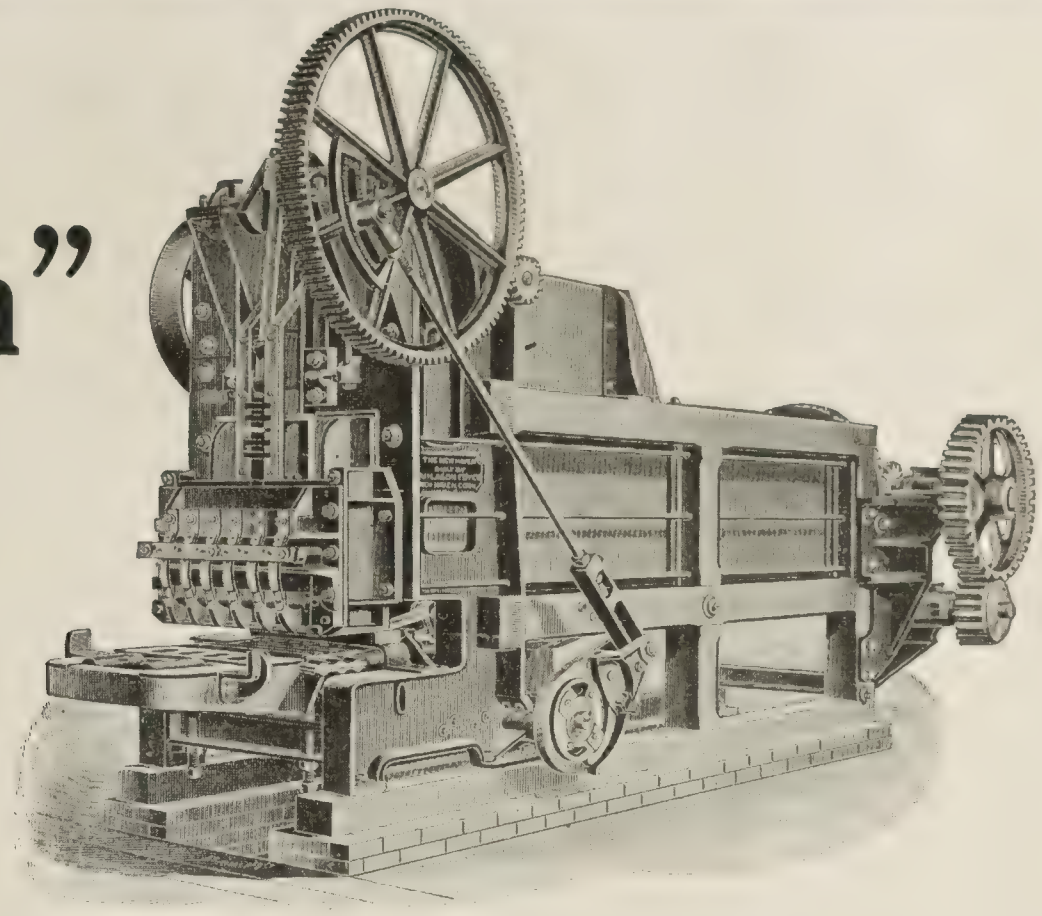
Get Our Catalogue No. 10 Now

Learn how and why the Schofield-Burkett Excavator will solve *your* problems—how and why it is more practical, simple and economical than any other.

Schofield-Burkett Construction Co.

Office and Works: Macon, Georgia

The "New Haven"



One Million Brick Per Month for Twenty Years—Day in and Out—is An Unusual Record—But Not for the "New Haven!"

In constructing the "NEW HAVEN" we have put in *everything* that makes for *efficiency, quality* and *speed* in turning out Brick. That we have succeeded—ask others—those who have used it for over twenty years and are *still* using it with the best of service and unimpaired efficiency.

The "NEW HAVEN" Soft-Mud Brick Machine is a marvel to do the work that it *does*—to last as long as it *does!*—and satisfy as long as it *does!*

While the "NEW HAVEN" is somewhat higher in price than some others, it is remarkably better in *service.* The repairs that you *don't* have to put into the New Haven offset the difference in price over and over—besides you have a Brickmaking Machine that doesn't have to be watched—all it's got to be is operated—and it will turn out profits as fast as it turns out your brick. Write for prices and complete information. Both will please you.

The Eastern Machinery Company

New Haven, Conn.

Notice to the Public

The Dunn Wire-Cut-Lug Brick Company put the square-edge, uniform-lug paving brick on the market in the year **1910.**

The first year, 2,233,000 of these brick were sold. In 1911 the sales increased to 7,572,250. In **1912** the total sales amounted to **36,912,320** brick for the year.

During the first four years inclusive, 71,741,474 of these brick were used for paving streets and highways.

During the year **1914** the sales amounted to **more than in all the preceding years combined.** In the first quarter of the year the sales totalled **11,368,481;** in the second quarter they amounted to **26,472,263,** and in the third quarter of the year the sales were brought to **79,575,060** for the nine months. The total sales for the year 1914 were **104,800,000.** This increase was due to the merits of the form of brick or it could not have been brought about; nor could these results have been achieved had not the advantages of brick with square edges, rough sides and uniform lugs, assuring flush surface joints, firm adhesion of filler and thorough penetration of bonding material to all parts of the joints, been required in the construction of first class pavements.

As a result of these demonstrations, twenty-six licensed manufacturers of paving brick, operating forty-two different plants, are now making square-edge, rough-side and uniform-lug brick under the Dunn patent.

Any attempt to infringe our rights under our patents or to evade our patents, by violating the law of fair trade, or otherwise, will be prosecuted to the full extent of the law.

Patented in the United States, Canada, Mexico and other foreign countries.

The Dunn Wire-Cut-Lug Brick Company

Conneaut, Ohio

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Displayed classified ads in conformity with style prescribed at $3.25 per inch. Cash must accompany allorders.

WANTED—HELP.

—

—

—

MANAGER FOR AUSTRALIA.

Wanted, works manager with knowledge and experience for production of high-class terra cotta, roofing tiles, trimmings, hollow tiles, etc. Particulars from The Cable Company, Room 912, Wabash and Jackson, Chicago. 6-2-1

—

—

—

WANTED—Machine room foreman. Stiff-mud, common; American machinery. Machine room foreman. Stiff-mud, face brick; Raymond machinery. Address: Vale Brick Co., Bryant Bldg., Kansas City, Mo. 6-2-1P

WANTED—POSITIONS.

WANTED—Position as superintendent, 20 years' experience in the manufacture of common brick, face brick, paving block, roofing tiles and hollow ware. Several years with German and American kiln builders, designing, building and operating continuous kilns and dryers. Expert burner, best references. Address: 5-BB, care of "Brick and Clay Record." 5-2-3P.

POSITION DESIRED—Practical and experienced superintendent, familiar with all clay and shale products, including fire, common, paving, building etc.; all processes. Address: 6-BA, care of "Brick and Clay Record." 6-2-1P

WANTED—Position as superintendent of brick plant. Experienced in fireclays, silica; building and paving brick. Employed, but desire change. Best references. Address: 6-BD, care of "Brick and Clay Record." 6-2-1P

POSITION WANTED—By practical potter as manager or experimentalist. Can produce results in sanitary, general or art goods, enameled, fireclay or vitreous. Gilmore, 320 Hillside Ave., Newark, N. J. 6-2-1P

POSITION WANTED—As Superintendent, burner or shade for brick plant. Can furnish best of references. W. H. Blagg, 912 E. 10th St., Kansas City, Mo. 6-2-1P

POSITION WANTED—Superintendent at present engaged desires change; paving block, building brick and fireproofing. Excellent references as to ability and character. Any firm desiring high-class man address: 6-B, care of "Brick and Clay Record." 6-1-P

WANTED—Position as superintendent or salesman. Twenty-four years' successful practical experience handling large plants manufacturing sewer-pipe, conduits, firebrick, face brick and fireproofing. A-1 references. Address: 6-R, care of "Brick and Clay Record." 6-1-P

WANTED—Position as manager of building or paving brick plant by high-grade young man familiar with every phase of the work. Address: 6-F, care of "Brick and Clay Record." 6-1-P

WANTED—Position as assistant to manager of structural material business by ceramic engineer with ten years' experience. Address: 6-D, care of "Brick and Clay Record." 6-1-P

WANTED—Position as foreman or head burner, 20 years' experience, any kind of kiln; continuous my specialty. Address: 6-P, care of "Brick and Clay Record." 6-1.

EQUIPMENT WANTED.

WANTED—Second-hand rotary clay dryer for drying clay from bank, 75 tons daily capacity. State what you have. Farmers Clay Products Co., Minneapolis, Minn. 6-2-1P

WANTED.

WANTED—To hear from owner of good brick and tile plant for sale. State price. D. F. Bush, Minneapolis, Minn. 6-2-1P

WANTED—Lines of rough face brick that can be sold in the St. Louis market at $12.00 per thousand, delivered to operation. Address: 6-BB, care of "Brick and Clay Record." 6-2-1

FOR SALE—CLAYWORKING PLANTS.

FOR SALE OR LEASE—Brick plant, capacity now 40,000 With addition to dryer can be increased to 100,000 capacity. Fine, inexhaustible shale; good coal can be secured from mine one-quarter of mile from plant. Located on railroad and river. Machinery in first-class condition. Address: 6-BC, care of "Brick and Clay Record." 6-2-2

FOR SALE—Brick plant, good clay. Soft-mud plant. Good demand for shipping brick. Wm. Hodkinson, Beaver City, Neb. 5-2-1

ASSIGNEE'S SALE OF VALUABLE BRICK PLANT.

The undersigned Assignee of Eldorado Brick Company offers to sell at private sale the entire plant of said company, situated near Eldorado, three miles from the center of Altoona, Pa., on the Hollidaysburg Branch of the Pennsylvania Railroad. The property consists of 16 acres of land containing an inexhaustible supply of good shale for making brick; five down-draft kilns, three of them round and two rectangular, all in good condition; brick machine with capacity of 30,000 per day; one engine, 150 h.p.; two boilers, aggregating 225 h.p.; grinding pan, capacity 20,000 per day; sufficient cars to conduct plant successfully with capacity of 20,000 per day, together with all other equipment of a modern brick plant.

Address all inquiries to Joseph Williams, 2423 Broad Avenue, Altoona, Pa., or to his attorney, H. A. Davis, 1321 Eleventh Ave., Altoona, Pa. 6-2-1P

FOR SALE CHEAP—Tile plant. Excellent clay; 3 kilns, 2 sheds, double decked. All necessary tools. Good reasons for selling. Delta Brick & Tile Co., Delta, Iowa. 6-1P

BARGAINS! BARGAINS!—Brickyards and cement plants. Any size, anywhere. Our list and services free to buyers. Western Sales Agency, Minneapolis, Minn. 6-2-1P

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE WESTERN DIVISION OF THE SOUTHERN DISTRICT OF GEORGIA.

In the matter of the Ragland Brick Company, Bankrupt—In Bankruptcy.

Under and by virtue of an order passed by the Honorable J. N. Talley, Referee in Bankruptcy, dated May 24th, 1915, the undersigned as Trustee in Bankruptcy of the Ragland Brick Company is directed to sell at private sale the brick plant of said Bankrupt, including the land, consisting of eighty acres more or less, buildings, machinery and equipment of said Bankrupt, all located at Ragland, St. Clair County, Alabama.

The lands of said Bankrupt being described as follows:

> "All that tract or parcel of land lying and being in the South half of the Southwest quarter of Section Eight, Township Fifteen, Range Five, East; beginning at a point five hundred (500) feet East of the Southwest corner of the Southwest quarter of the Southwest quarter of Section Eight, and running thence East along the Section line to the Southeast corner of the Southeast quarter of the Southwest quarter of Section Eight; thence North to the right of way of the Seaboard Airline Railroad; thence Northwest along said right of way to where it strikes the quarter section line between the Southwest quarter of the Southwest quarter and the Southeast quarter of the Southwest quarter; thence South along said line to Trout Creek; thence along said creek to where the creek turns East, thence running five hundred and eighty (580) feet, South 74 degrees West; thence two hundred (200) feet, South 19 degrees 30 minutes west; thence ninety (90) feet, South 45 degrees, 15 minutes West, thence two hundred and eleven (211) feet, South 8 degrees 30 minutes East, to the beginning point. As shown by plat of said land recorded in Plat Book Number Two, page 13 of the records of St. Clair County, Alabama. Said tract of land being the same land conveyed by C. H. and Mrs. L. K. Pittman to Wilpicoba Clay Works by deed recorded in Book 7, page 588, in the office of Judge of Probate of St. Clair County, Alabama. Also all that tract or parcel of land in the State of Alabama and more fully described as being in the Northeast quarter of the Northwest quarter of Section Seventeen (17), Township Fifteen (15), Range Five (5) East, in the County of St. Clair, the same comprising forty (40) acres, and being the same property conveyed by C. H. and Mrs. L. K. Pittman to the Wilpicoba Clay Works by deed recorded in Book 11, page 182, Judge of Probate's Office, St. Clair County, Alabama."

The plant is a complete plant thoroughly equipped with buildings, machinery and kilns for the manufacture of paving brick and is located along the right of way of the main line of the Seaboard Airline Railroad between Atlanta, Georgia, and Birmingham, Alabama.

The undersigned is directed to receive sealed bids up to the hour of twelve o'clock, noon, July 14th, 1915, for said above described property, bids received to be opened at the office of the Referee in Bankruptcy, No. 304 Grand Building, Macon, Georgia.

Each bidder must deposit with his bid ten per cent of his bid, which will be returned in case the bid is not accepted.

Said property will be sold freed from all liens thereon, and liens, if any, to attach to the proceeds of sale as fully as they now attach to the property.

Sale to be made subject to confirmation by the Court.

WM. E. MARTIN, Jr.,
Trustee in Bankruptcy for Ragland Brick Company.

Post Office Address:
Macon, Georgia.

Brick and Clay Record Classified Ads Are Result Producers

BRICK PLANT AT A BARGAIN—Party retiring from business offers a complete plant, in active operation, at a sacrifice. Fine location, excellent trade opportunities. A rare bargain to a quick buyer. Will take little money to turn the deal if done at once. Address: P. O. Box 323, Hagerstown, Md. 6-2-1

FOR SALE—A favorably located brick plant and coal mine in eastern Ohio; excellent shale and fine coal. Capacity 25,000 brick per day. On leading railroad system and near market. Address: 5-BN, care of "Brick and Clay Record." 5-2-4P.

TILE PLANT FOR SALE—Engine, boilers, tile machines, sewer pipe press for large tile, steam pipe. Send for our inventory. Remember, plant is for sale in whole or part. Everything No. 1. Edgar M. Heafer & Co., Bloomington, Ill. 2-TF

FOR SALE—Drain tile plant, good location in northeastern Indiana, thoroughly equipped and in operation. Will sell part interest to a practical clayworker. C. J. Eyanson, Columbia City, Ind. 6-2-1P

FOR SALE—SAND-LIME PLANTS

FOR SALE—Cheap. A complete sand-lime brick plant: tube mill, dryer, English rotary press. Will sell as a whole or any part of it. Write: Albert H. Mueckler, Trustee, Manistee, Mich.

FOR SALE—SECOND-HAND MACHINERY.

PROPERLY REBUILT MACHINERY IN STOCK—Boilers: Stationary, firebox and vertical, all sizes, high and low pressure. ENGINES: Corliss, automatic, throttling, gas and gasoline. GENERATORS and MOTORS: All sizes and kinds. HEATERS, PUMPS, valves, pipe, belting, saw mills, woodworking and ironworking machinery. Sole manufacturers of the celebrated "LEADER" INJECTORS and EJECTORS. Send us your requirements. We can fill them. The Randle Machinery Co., 1733 Powers St., Cincinnati, O. 1-TF.

FOR SALE—Barney & Kilby 60 h.p. boiler and 12x18 engine, steam pumps, No. 2 Pulling; Union 5x3x6; Cook deep well 4x24. Bargain if sold at once. Tiffin Brick Co., Tiffin, Ohio. 6-2-2P

FOR SALE—50 end dump cars, first-class, second-hand condition; capacity 3,000 lbs. These cars can be purchased cheap if bought at once. Address: 6-BE, care of "Brick and Clay Record." 6-2-1

FOR SALE—Cheap, one second-hand American Clay Machinery Co.'s Special Giant auger machine, equipped for making fireproofing and hollow ware. Address: 6-JA, care of "Brick and Clay Record." 6-2

FOR SALE—All kinds of Clayworking Machinery, bargains in used engines, boilers, motors, brick and tile machines, dry pans, pug mills, cutting tables, anything you want. Two good fully equipped plants for sale. CLAYWORKERS EXCHANGE, Farmers Bank Bldg., Springfield, Ill. 5-tf.

FOR SALE—Practically new: One 40 h.p. and one 60 h.p. high pressure boiler, one 100 h.p. slide valve engine, 9 ft. American dry pan and clay elevator, No. 88 Brewer brick and tile machine, Fayet's end-cut cutting table, pulleys, shaft and boxing, Pulsometer steam pump No. 3, 8 ton of 16-lb. rails, 12,000 ft. double strength steam pipe. Address: W. E. Lyon & Co., Carthage, Ill. 5-2-TF.

FOR SALE—Second-hand multigraph machine in first-class condition. Will make special time inducements. Address: 5-BP, care of "Brick and Clay Record." 5-2-1.

FOR SALE—Stockbridge crank shaper. New and not used. This is a 24-inch shaper with back gear, and patent two-piece crank with quick return motion. Price paid, $625.00, and must be sold. Address: 6-C, care of "Brick and Clay Record." 6-TF

FOR SALE CHEAP—125 h. p. boiler, 100 h. p. engine, 2 brick machines, pulleys and shafting, all in good condition. Address: J. F. Vogan, Franklin, Pa. 4-TF

FOR SALE—Richardson repress used but little and practically as good as new. Great bargain. Address: 6-X, care of "Brick and Clay Record" 6-2P

FOR SALE—One 4-mold Penfield dry press in good condition. Address: Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo.

FOR SALE—Cheap for cash, f.o.b. cars Slidell, La.—Chambers No. 8 pugmill and brick machine, automatic cutter, clay distintegrator and spur-geared friction hoist. All good condition. Address: Southern Creosoting Co., Ltd., Slidell, La. 6-2-12

PATENTS

Inventions Protected.
Trade Marks Registered.
Patents Investigated.
Established 1895.
HUBERT E. PECK.
635 F. St., Washington, D. C.

RAILS

all sizes—small or large lots. New and relaying. Second hand rails cut to any length for special purposes. Frogs, switches, splices, and all track accessories. **Immediate shipment from stock.**
L. B. FOSTER CO.
PARK BLDG. PITTSBURGH, PA.

STEEL RAILS.

All sections, New and Relaying, in stock for immediate shipment.
Second-hand rails cut to any lengths desired for all purposes.
Also Frogs, Switches, Spikes and Bolts.
M. K. Frank, Pittsburgh, Pa.

New—RAILS—Relaying.
All Sections—Lowest Prices.
A few snaps:
50 tons 12-lb. relay
100 tons 16-lb. relay
200 tons 20-lb. relay

"ZELNICKER" ST. LOUIS

Get our bargain bulletins of
MACHINERY, CARS, LOCOMOTIVES, ETC.
6-4

Modern Brickmaking

By A. B. SEARLE

440 Pages **260 Illustrations** **$5.00 Post Free**

A HANDY BOOK FOR THE PRACTICAL MAN

Many clayworking publications are of such a technical and exhaustive character that they are both uninteresting and unsuitable for the use of a business man. In Mr. Searle's book, however, each question is considered in a manner that maintains interest and he gives the reader just the information needed and no more.

"Brick and Clay Record"

445 Plymouth Court, Chicago



BRICK HOUSES
And How to Build Them

This book is a complete and clear manual of brick construction, designs and details. It tells what every builder should know of the classification and measurements of brickwork, together with architect's drawings of framing for brick houses and the use of brick veneer.

Up-to-Date and Approved Methods

This book also tells of the miscellaneous uses of brick, including ornamental brick and tile work, chimney and flue construction, brick fireplaces, brick sewers, cisterns and flush tanks, etc. It tells the carpenter and builder everything he should know to undertake brickwork and how to make a success of every job in which brick is used. It is so clearly illustrated by details that there can be no uncertainty in any builder's mind as to each successive step to be taken.

Beautiful Designs Shown

Over sixty designs of the very best modern architectural work are presented in this book. These designs are of attractive, substantial, homelike brick houses of many types. Specifications and working drawings for one of these homes are given in Ideal Homes, August 4th issue of "Brick and Clay Record."

Price, Postpaid, - - - - - - - $1.00

BOOK DEPARTMENT
BRICK AND CLAY RECORD
CHICAGO

Notice to Manufacturers, Sales Agents Architects, Contractors and Builders

In the District Court of the United States, Southern District of Ohio, Eastern Division, in Equity.

No. 33

HOCKING VALLEY PRODUCTS COMPANY ..... Plaintiff

—vs.—

THE McARTHUR BRICK COMPANY ..... Defendant

ENTRY

This day came the plaintiff by T. P. Linn, its solicitor, and the defendant by O. E. Vollenweider and Finckel and Finckel, its solicitors, and thereupon, on motion of the plaintiff, the defendant by its said solicitors consenting thereto, it is ordered, adjudged and decreed that a perpetual injunction issue out of and under the seal of this Honorable Court against the defendant as follows: that the defendant, The McArthur Brick Company, its agents, clerks, servants, workmen, employes and attorneys and all persons claiming or holding under or through said defendant, be and they are hereby perpetually enjoined from directly or indirectly making, using, selling or practicing the patented inventions made by Daniel E. Reagan, as set out in the Bill herein, and more particularly contained in and described as Letters Patent of the United States to Daniel E. Reagan, assignor, to the Hocking Valley Products Company, No. 1,100,989, dated June 23rd, 1914, for brick machine, and No. 1,101,093, date June 23rd, 1914, for method of ornamenting bricks, and from infringing said Letters Patent, or either of them, directly or indirectly, in any manner whatsoever.

It further appearing to the Court that the parties hereto have settled and adjusted the question of profits and damages, no order with respect thereto is made.

It is further ordered, adjudged and decreed that plaintiff have and recover of and from said defendant the costs of this suit taxed at $..... and that it have execution therefor.

Entered May Twenty-Sixth, Nineteen Hundred Fifteen.

List of Those Licensed to Manufacture Rug Brick

The Alliance Brick Company, Alliance, O.
Bloomfield Brick Company, Bloomfield, Ind.
Boone Brick, Tile & Paving Company, Boone, Iowa.
Decatur Brick Manufacturing Company, Decatur, Ill.
Des Moines Clay Company, Des Moines, Iowa.
The Everhard Company, Massillon, O.
Kulage Brick Works, Hobart, Ind.
Los Angeles Pressed Brick Company, Los Angeles, Cal.
The McArthur Brick Company, McArthur, Ohio.
New Lexington Clay Manufacturing Company, New Lexington, O.
Twin City Brick Company, St. Paul, Minn.
The Wadsworth Brick & Tile Company, Wadsworth, O.
Western Brick Company, Danville, Ill.
Milton Pressed Brick Company, Milton, Ontario.

Hocking Valley Products Company

Columbus, Ohio

D. E. Reagan, Pres

Sole Owner of RUG Brick Patents and Manufacturer of Greendale RUG Brick